



METROPOLITAN WATER DISTRICT



Biennial Budget

Fiscal Years
2020/21 and
2021/22

**Uniquely Metropolitan:
Maintaining Regional
Reliability**



GOVERNMENT FINANCE OFFICERS ASSOCIATION

*Distinguished
Budget Presentation
Award*

PRESENTED TO

**Metropolitan Water District of Southern California
California**

For the Fiscal Year Beginning

July 1, 2018

Christopher P. Morrill

Executive Director

MWD AT A GLANCE

ORGANIZATION

Authority: The Metropolitan Water District Act (California Statutes 1927).

Incorporated: Dec. 6, 1928.

First Board Meeting: Dec. 29, 1928.

Mission: To provide Metropolitan's service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Imported Water Sources: Colorado River and California State Water Project.

Service Area: About 5,200 square miles in Los Angeles, Orange, San Diego, Riverside, San Bernardino and Ventura counties.

Population Served: Approximately 19 million.

Member Agencies: 26.

Founding Cities (December 1928): Anaheim, Beverly Hills, Burbank, Colton*, Glendale, Los Angeles, Pasadena, San Bernardino*, San Marino, Santa Ana and Santa Monica.

* Withdrew in 1931.

Subsequent Member Agency Cities: Cities of Fullerton (joined 1931), Long Beach (1931), Torrance (1931), Compton (1931), and San Fernando (1971).

Municipal Water Districts: West Basin MWD (1948), Inland Empire Utilities Agency (1950), Three Valleys MWD (1950), Eastern MWD (1951), MWD of Orange County (1951), Foothill MWD (1953), Central Basin MWD (1954), Western MWD (1954), Calleguas MWD (1960), Las Virgenes MWD (1960), and Upper San Gabriel Valley MWD (1963), **County Water Authority:** San Diego (1946).

GOVERNANCE

Board of Directors: 38. Each member agency is entitled to at least one director; additional directors are based on the agency's assessed valuation. Board meetings are generally held on the second Tuesday of each month. Check www.mwdh2o.com for meeting times and agendas.

FACILITIES

Colorado River Aqueduct: 242 miles from Lake Havasu to Lake Mathews, Riverside.

Construction: Began 1933, completed 1939; CRA and regional distribution system operational 1941.

Capacity: 1.3 million acre-feet[†] annually.

Pumping Plants (east to west): Whitsett Intake (lift 291 ft.); Gene (303 ft.); Iron Mountain (144 ft.); Eagle Mountain (438 ft.); Julian Hinds (441 ft.); Total lift 1,617 feet.

Siphons: 144, totaling 29 miles.

Tunnels: 29, totaling 92 miles.

Canals: 63 miles.

Conduits and Pipeline: 58 miles.

Design Capacity: 1,605 cubic feet per second.

Water Treatment Plants: Joseph Jensen, Granada Hills (capacity 750 million gallons per day); Robert A. Skinner, Winchester (630 mgd); F.E. Weymouth, La Verne (520 mgd); Robert B. Diemer, Yorba Linda (520 mgd); and Henry J. Mills, Riverside (220 mgd)

Reservoirs: Diamond Valley Lake, Hemet, capacity 810,000 AF; Lake Mathews, Riverside, 182,000 AF; Lake Skinner, Winchester, 44,000 AF; Copper Basin, Gene, 24,200 AF; Gene Wash, Gene, 6,300 AF; Live Oak, La Verne, 2,500 AF; Garvey, Monterey Park, 1,600 AF; Palos Verdes, Rolling Hills, 1,100 AF; and Orange County, Brea, 212 AF.

Total Reservoir Storage Capacity: 1,072,000 AF

Distribution System: 830 miles of pipelines and tunnels; about 400 connections to member agencies.

Hydroelectric Plants: 16; nameplate capacity 131 megawatts.

State Water Project: Metropolitan participates in the State Water Project, with rights to use the facilities and an allocation for water.

SUPPLY, DELIVERIES AND WATER TRANSACTIONS

Average Daily Delivery: 4,900 AF (5-year avg. as of Dec. 31, 2015).

Record Daily Delivery: 9,872 AF on June 28, 1994.

Record Annual Water Transactions: 2.5 million AF in 1990.

Unit Price (full service): Effective Jan. 1, 2020, rates are \$1,078 per AF for treated water, and \$755 per AF for untreated water. Effective Jan. 1, 2021, rates are \$1,104 per AF (treated) and \$777 per AF (untreated), and effective Jan. 1, 2022, rates are \$1,143 per AF (treated) and \$799 per AF (untreated).

Budgeted Water Transactions Assumption: 1.60 MAF for FY 2020/21 and 1.60 MAF in FY 2021/22.

FINANCE AND ADMINISTRATION

Water Revenue Bond Ratings: Standard & Poor's AAA; Moody's Aa1; Fitch AA+.

Budget: July 1, 2020 – June 30, 2021: \$1,936 billion

July 1, 2021 – June 30, 2022: \$1,981 billion

Capital Projects: \$250 million (FY 2020/21)

\$250 million (FY 2021/22)

Employees: 1,907 budgeted regular employees FY 2020/21 (full-time equivalent positions); 1,907 employees (FTEs) FY 2021/22

Fund Sources: Water rates and charges, 77%; fund withdrawals, 8%; taxes, 7%; hydroelectric sales and miscellaneous income, 2%; other, 5% (Biennial Budget FY 2020/21, FY 2021/22).

Uses of Funds: State Water project payments, 30%; operations & maintenance, 26%; debt service, 14%; construction, 10%; fund deposits, 9%; demand management programs, 2%; supply programs, 3%; and Colorado River power, 3%; other, 2% (Biennial Budget FY 2020/21, FY 2021/22).

[†]Acre-foot=325,851.4 gallons

TABLE OF CONTENTS

| | |
|---|------------------|
| General Manager's Transmittal Letter | <u>1</u> |
| District Overview | <u>11</u> |
| District Profile | <u>11</u> |
| Mission | <u>12</u> |
| Core Values | <u>12</u> |
| Service Area | <u>12</u> |
| Map | <u>13</u> |
| Strategic Plan Summary | <u>15</u> |
| Performance Indicators | <u>15</u> |
| Organization Structure | <u>16</u> |
| Member Agencies | <u>16</u> |
| Board of Directors | <u>16</u> |
| Organization Chart | <u>17</u> |
| Senior Management | <u>18</u> |
| Workforce | <u>18</u> |
| Offices | <u>18</u> |
| Financial Organization | <u>19</u> |
| Fund Structure and Descriptions | <u>19</u> |
| Financial Reporting | <u>21</u> |
| Budgetary and Accounting Basis | <u>21</u> |
| Financial Planning | <u>22</u> |
| Policies | <u>22</u> |
| Budget Process | <u>25</u> |
| Balanced Budget | <u>25</u> |
| Budget Calendar | <u>25</u> |
| Finance Department Responsibilities | <u>26</u> |
| General Manager Responsibilities | <u>27</u> |
| Budgetary Controls | <u>27</u> |

| | |
|--|----------------------------|
| District Overview, continued | |
| Budget Adjustments | <u>28</u> |
| Capital Investment Plan (CIP) | <u>28</u> |
| Structure | <u>28</u> |
| Preparation | <u>29</u> |
| Biennial Budget Summary | <u>31</u> |
| Appropriations | <u>31</u> |
| Fund Summary | <u>32</u> |
| Sources of Funds | <u>34</u> |
| Operating Revenue | <u>35</u> |
| Capital Funding | <u>37</u> |
| Uses of Funds | <u>38</u> |
| Operations and Maintenance | <u>41</u> |
| Departmental Budget by Organization | <u>41</u> |
| O&M Budget by Organization | <u>42</u> |
| FY 2020/21 & 2021/22 O&M Annual Budget by Expenditure Type | <u>43</u> |
| Staffing Plan | <u>46</u> |
| Capital Investment Plan | <u>47</u> |
| Fund Balances and Reserves | <u>47</u> |
| Rate Structure Overview | <u>49</u> |
| Framework | <u>49</u> |
| Rate Structure Design | <u>51</u> |
| Understanding the Layout of the Departmental Budget | <u>57</u> |
| Departmental/Group Budgets | <u>57</u> |
| Understanding the Layout | <u>57</u> |
| Office of the General Manager | <u>59</u> |
| Bay Delta Initiatives | <u>65</u> |
| Water System Operations | <u>71</u> |
| Water Resource Management | <u>79</u> |
| Engineering Services | <u>87</u> |
| Office of Chief Administrative Officer | <u>95</u> |
| Information Technology | <u>103</u> |
| Human Resources | <u>111</u> |
| Real Property | <u>117</u> |
| Office of Chief Financial Officer | <u>125</u> |
| Departmental Operating Budgets, continued | |

| | |
|--|-----------------------------------|
| External Affairs | <u>133</u> |
| General Counsel Department | <u>141</u> |
| General Auditor Department | <u>147</u> |
| Ethics Office | <u>151</u> |
| Staffing Plan Summary | <u>157</u> |
| Operating Equipment Summary | <u>158</u> |
| Key Performance Indicators | <u>159</u> |
| Non-Departmental Budgets | <u>163</u> |
| State Water Project | <u>163</u> |
| CRA Power | <u>167</u> |
| Supply Programs | <u>171</u> |
| Demand Management | <u>181</u> |
| Developments | <u>185</u> |
| Capital Financing | <u>187</u> |
| Ten-Year Financial Forecast | <u>193</u> |
| Sources of Funds | <u>196</u> |
| Uses of Funds | <u>199</u> |
| Fund Balances and Reserves | <u>207</u> |
| Financial Ratios | <u>207</u> |
| Capital Expenditures | <u>209</u> |
| Summary | <u>209</u> |
| Capital Investment Plan Organization | <u>210</u> |
| Capital Investment Plan Development | <u>212</u> |
| Capital Investment Plan For Fiscal Years 2020/21 and 2021/22 | <u>217</u> |
| Financial Projections | <u>219</u> |
| Potential Changes to the Proposed CIP | <u>223</u> |
| Capital Investment Plan Detail | <u>224</u> |
| Individual Program Summaries | <u>225</u> |
| Appendices | <u>311</u> |
| Service Area Economy | <u>311</u> |
| Financial Powers & Policies | <u>333</u> |
| Glossary of Terms | <u>364</u> |
| Resolutions and Ordinances | <u>370</u> |

This page intentionally left blank.

GENERAL MANAGER'S TRANSMITTAL LETTER

July 2020

This document presents Metropolitan's fiscal year (FY) 2020/21 and FY 2021/22 Biennial Budget and associated Ten-Year Financial Forecast. The Board, Finance and Insurance (F&I) Committee, and member agencies have reviewed and evaluated Metropolitan's Biennial Budget and the rates and charges necessary to support the expenditures. The Ten-Year Financial Forecast of expenditures and revenues also present the implications of near-term actions on long-term revenue requirements.

The budgeted expenditures and revenues were provided to the Board on January 31, 2020 in a proposed biennial budget, along with the proposed rates and charges. Board workshops were held on February 10, 2020, February 25, 2020 and March 9, 2020 and these included extensive budget and revenue discussions. Public testimony was provided and considered at the public workshops, the public hearings on March 10, 2020, the F&I Committee meeting on April 13, 2020, as well as the board meeting on April 14, 2020.

In March 2020, COVID-19 spread throughout the United States and the world. The World Health Organization declared a COVID-19 pandemic on March 11, 2020. Stay-at-home orders, other social distancing directives, and state-of-emergency orders went into effect within Metropolitan's service area, throughout California, and throughout the nation. Utility retailers, including some member agencies of Metropolitan and agencies that purchase water from them, anticipate their customers are likely to be adversely impacted financially. Those impacts may result in the inability to pay utility bills, which would create financial stress on Metropolitan's member agencies. The extent of the financial impact to be caused by the COVID-19 pandemic is unknown as of the time of this Budget, as are the relief measures the federal and state governments may provide to assist in such impacts. But it is certain that the financial impact to Metropolitan's region and beyond will be significant and far-reaching. Metropolitan is already seeing delay in continuing some Capital Investment Plan (CIP) work, which is anticipated to continue into the next biennial budget cycle. These and other changed circumstances affect certain assumptions previously made in the proposed budget, rates, and charges, and the Cost of Service Report prepared in January 2020.

As a result of the COVID-19 crisis, staff provided a revised, updated budget and rates recommendation to the Board on April 5, 2020 and presented it to the F&I Committee on April 13, 2020. The revisions to the biennial budget recognized the anticipated reduced expenditures in the CIP due to the COVID-19 impact on projects, and the changing anticipated demand in treated and untreated water due to PFAS (Per- and Polyfluoroalkyl Substances) issues. It is anticipated that potential detection of PFAS in groundwater will result in decreased untreated water demand for groundwater replenishment and more treated water demand for potable use.

Specifically, the biennial budget was revised as follows:

- 50 thousand acre-feet (TAF) untreated water sales projections were shifted to treated water sales as a result of the impact PFAS will likely have on demand for replenishment water;
- CIP expenditures were reduced \$25 million in FY 2020/21 with an updated assumption that only 80 percent of planned spending will be completed in FY 2020/21, given the likely impacts of COVID-19 on scheduling of construction work; and
- PAYGO funding was reduced to 55% in FY 2020/21 to preserve cash reserves during the pandemic emergency.

The Board also directed staff to explore potential cost reductions in the biennial budget cycle of FY 2020/21 and FY 2021/22, including in the following areas: a) factor for unrealized staffing levels; b) reduce advance recruitment for overlapping staffing positions, as part of succession planning; c) match CIP appropriations to a slowdown in expenditures; d) suspend the director inspection trip program and eliminate or reduce non-essential Board and staff travel; e) suspend fleet vehicle and other equipment purchases; and f) plan for strategic use of reserves and financing to preserve cash reserves. Staff will present updated information to the Board at its September 2020 regular meeting. The Board adopted the Biennial Budget and associated Ten-Year Financial Forecast, *as modified and amended*, on April 14, 2020. The budget presented in this document reflects the final approved budget.

Detailed information, including the proposed budget, rates and charges, cost of service analysis, and cost of service report, was made available to the public on our website during the process and was considered by the Board, the F&I Committee and member agencies. In addition, Metropolitan received written communications from a number of individuals and organizations, as well as public comments at its meetings and workshops.

BIENNIAL BUDGET

Based on Board discussions and deliberations over several months, the Biennial Budget for FY 2020/21 and FY 2021/22 meets the fixed charge coverage target, provides funding from revenues for the Capital Investment Plan (CIP), and promotes long-term fiscal sustainability goals as reflected in the Ten-Year Financial Forecast.

Metropolitan continues to be prepared to meet the challenges of reliably providing water to its service area throughout a variety of hydrologic conditions. Metropolitan has a diverse portfolio of water supplies, which have been augmented by additional programs approved by the Board over the last several years, and Metropolitan has made substantial investments in storage and supply programs to store water for drought years.

As a result of hydrologic variability, Metropolitan's water sales can vary widely. Unlike a retail water provider, Metropolitan is a voluntary cooperative providing wholesale water service to its member agencies and demand by those agencies varies with their needs and with hydrological factors. Demands on retail water providers, on the other hand, generally remain more leveled as their customers rely solely on them and their usage characteristics do not vary as widely from year-to-year. Like a retail water provider, however, Metropolitan remains ready to provide water services to its member agencies.

Accordingly, Metropolitan determines its biennial budget and rate-setting processes on average conditions and relies on water storage and cash reserves to buffer changes in water demand, revenue and cost volatility.

The impacts of climate change mean that current hydrologic conditions are less cyclical, more volatile and predicting current trends has become more challenging. To prepare for these uncertainties, Metropolitan has made significant investments in supply and storage programs over the last 20 years. Fiscal year 2018/19 was a record wet water year translating to a record low revenue for FY 2019/20. As of December 2019, the projected revenues are below budget by nearly \$200 million. While revenues were reduced, Metropolitan was able to store significant water supplies which will protect Southern California from drought impacts in the future.

To accurately reflect the current conditions and projected future trends, water transactions (a term that includes sales, exchanges, and wheeling) are projected to be 1.60 million acre-feet (MAF) for FY 2020/21 and 1.60 MAF for FY 2021/22. No wheeling transactions are projected in that period. FYs 2020/21 and 2021/22 are lower than previous forecasts as Southern California is coming off a record wet 2018-2019 water year and local supplies are robust; Southern California has experienced two record-setting wet years over the last five years - FY 2016/17 and FY 2018/19 - with Metropolitan's five-year average water transactions at 1.62 MAF. The FYs 2020/21 and 2021/22 projections assume an average year hydrology and reflect the expectation that demands will trend lower due to consumer response to the previous drought and continued conservation initiatives. The projection also incorporates the continued operation and implementation of local resource projects.

Metropolitan’s SWP supplies are projected to be 1.06 MAF in FYs 2020/21 and 2021/22. This is based on a 50 percent SWP allocation and accounts for the utilization of Metropolitan’s SWP and Colorado River supply programs. For FYs 2020/21 and 2021/22, Colorado River diversions are projected to be 745 thousand acre-feet (TAF) and 733 TAF, respectively.

The Board approved the FY 2020/21 and FY 2021/22 Biennial Budget and water rates and charges on April 14, 2020 and authorized the following actions as summarized in Table 1:

- Appropriate \$2,810.9 million for Metropolitan O&M and operating equipment, power costs on the Colorado River Aqueduct, SWP operations, maintenance, power and replacement costs and SWP capital charges; demand management programs including the local resources and conservation program; and costs associated with supply programs;
- Appropriate as a continuing appropriation, \$605.7 million for (FY 2020/21 and FY 2021/22) debt service on Metropolitan general obligation and revenue bonds;
- Authorize the use of \$245 million in operating revenues to fund the Capital Investment Plan for FY 2020/21 and FY 2021/22; the appropriation of \$500 million to fund the CIP for FY 2020/21 and FY 2021/22 was approved by the Engineering and Operations Committee on April 14, 2020; and,
- Adopt an overall rate increase of 3.0 percent effective January 1, 2021, and an additional 4.0 percent effective January 1, 2022.

Table 1: FY 2020/21 and FY 2021/22 Operating and Capital Appropriations, \$ millions

| Adopted Budget | FY 2020/21 | FY 2021/22 | Total Biennium |
|-----------------------|-------------------|-------------------|-----------------------|
| Operating Budget * | \$1,387.4 | \$1,423.5 | \$2,810.9 |
| Debt Service | 298.7 | 307.0 | 605.7 |
| CIP ** | 250.0 | 250.0 | 500.0 |
| Grand Total | \$1,936.1 | \$1,980.5 | \$3,916.6 |

* includes Conservation appropriation of \$43M per year. The annual Conservation expenditures are estimated to be \$25M per year.

** CIP appropriation is \$500M over the biennium. Estimated CIP expenditures are estimated to be \$200M in FY 2020/21 and \$225M in FY 2021/22.

The FY 2020/21 and FY 2021/22 Biennial Budget reflects the Board’s determination that it is essential to Metropolitan’s fiscal integrity to maintain an ad valorem tax rate in excess of the limitation in Section 124.5 of the Metropolitan Water District Act (MWD Act), as the Board has done since the FY 2013/14 tax levy. Maintaining the ad valorem tax rate at the current level of 0.0035 percent of assessed value for both fiscal years is projected to generate ad valorem tax revenues of \$139.9 million in FY 2020/21 and \$140.1 million in FY 2021/22. Over the biennial budget period, maintaining the ad valorem tax rate at the current level is essential to the fiscal integrity of the District as it will provide revenues that can be used to pay for growing State Water Contract costs, help to maintain a balance between fixed and variable revenues, and reduce the impact of future water rate increases.

The Board held a public hearing on March 10, 2020 to consider the applicability of the ad valorem tax rate limit and in April adopted the finding that it is essential to Metropolitan’s fiscal integrity to collect property taxes in excess of the Section 124.5 limitation. If the ad valorem tax were limited by Section 124.5, the projected overall rate increases in FY 2020/21 and FY 2021/22 would need to be 8 percent higher.

The budget continues funding of the Board's key priorities including:

- Capital Investment Plan (CIP) planned spending for the biennial period of FY 2020/21 and FY 2021/22, of approximately \$500 million, of which \$245 million will be funded from revenues (PAYGO). CIP expenditures are anticipated to be 80 percent of planned spending in FY 2020/21 and 90 percent of planned spending in FY 2021/22. CIP expenditures are anticipated to be lower in the first year of the biennium as a result of the impact of the COVID-19 crisis on project schedules. Expenditures for the CIP will be managed by focusing on projects that are critical to maintaining water quality, reliability, and safety. The CIP reflects the focus on addressing aging infrastructure and compliance with regulatory requirements. Included in the CIP planned expenditures are also expenditures related to the minor capital projects program, which were previously separately approved and appropriated by the Board.
- Continued support for demand management programs, including proposed funding for the Conservation Program set at \$43 million annually for the biennial period and ten-year forecast. In the last few years, demand management expenditures have not reached the budgeted amount. The Board has directed staff to use the FY 2019/20 fiscal-year-end balance of the Water Stewardship Fund to fund demand management, and not to collect the Water Stewardship Rate or any other rate or charge to fund demand management costs, during the biennial period. The Water Stewardship Rate will continue to be collected through the end of CY 2020, which will also add to the available Water Stewardship Fund balance. Should demand management costs exceed available funds, staff will seek further direction from the Board;
- Funding of \$1,109 million for the biennial period of FY 2020/21 and FY 2021/22 for Operations and Maintenance (O&M), including labor and benefits, water treatment chemicals, solids handling, professional services, and operating equipment purchases. Regular full-time positions remain flat with the FY 2019/20 budget. Departmental labor budgets reflect negotiated labor increases and allowable merit adjustments as well as increased benefit costs such as pension and medical. Funds are also included to continue addressing succession planning with efforts directed at advance recruitment, apprenticeship and internship programs.
- Funding of \$1,355 million for the SWC and Colorado River power costs for the biennial period of FY 2020/21 and FY 2021/22 to ensure a reliable water supply to southern California.
- Continued funding of \$130 million for the biennial period of FY 2020/21 and FY 2021/22 for Supply Programs in the region, the Central Valley, and the Colorado River system to cover the costs of storing or withdrawing supplies. This funding helps reduce the likelihood that Metropolitan will need to declare a Water Supply Allocation in future dry years.
- The Biennial Budget includes Metropolitan's planned contribution of \$25 million per year for Delta conveyance project planning activities. This contribution follows Board policy that staff work with the State to find solutions to improve Delta conveyance. The focus over the next two years will be supporting the California Department of Water Resources as it seeks permits for a Delta conveyance project; participating in the Delta Conveyance Design and Construction Authority; and continuing to put forward sound scientific research to help inform and improve Delta management decisions. If staff determines that Metropolitan's appropriate contribution toward planning activities should exceed the budgeted amount, the General Manager will request authorization from the Board for additional funding. Additionally, at a later date staff will recommend that the Board separately consider Metropolitan's participation in a new Delta conveyance project, after project planning and permitting has progressed further.

- Funding for the potential Regional Recycled Water Program of \$30 million for the preparation of a programmatic environmental impact report is included in the Biennial Budget. This is the next step before the Board will be fully informed and ready to decide on whether to proceed with further investments in this potential project.
- Debt service costs decrease by \$24 million over the biennial budget period compared to the FY 2019/20 budget primarily as a result of favorable refundings and overall debt reduction. While the ten-year forecast projects \$970 million in new debt issuance, existing debt will be paid down at a faster rate resulting in outstanding debt decreasing by \$739 million to a balance of \$3.4 billion by the end of the ten-year forecast;
- Rate increases in the remaining eight years of the Ten-Year Financial Forecast ranging from 3 to 5 percent, which meet all financial policy guidelines.
- Meeting financial targets for fixed charge coverage during the biennium and achieving revenue bond coverage targets during the ten-year forecast period.

TEN-YEAR FINANCIAL FORECAST

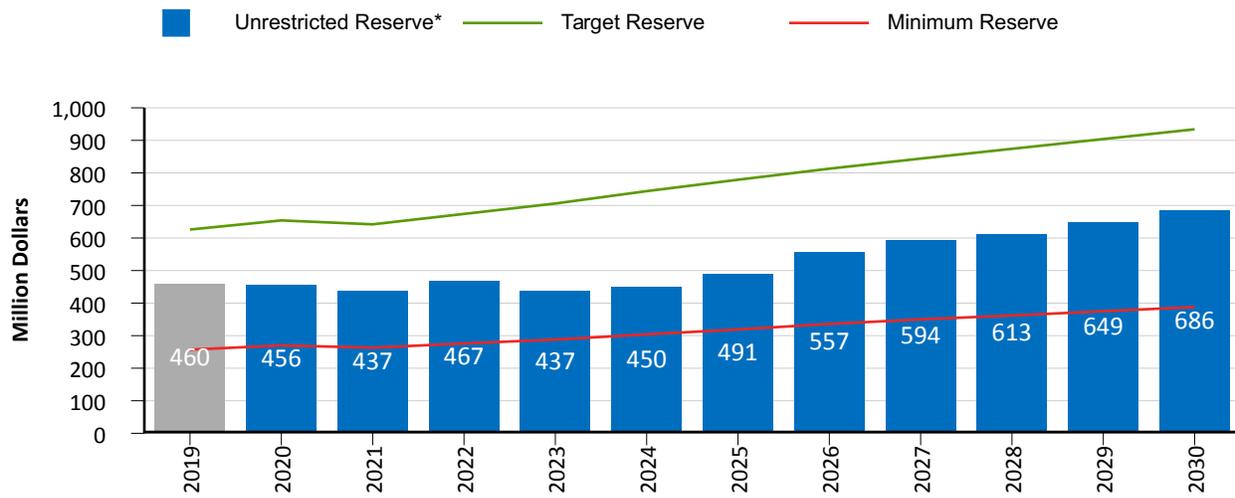
The Biennial Budget and Ten-Year Financial Forecast comprise Metropolitan's long-range financial plan. The Biennial Budget establishes the foundation for a ten-year forecast of water transactions, expenditures, revenues, projected rate increases and financial indicators. Incorporating a ten-year forecast within the biennial budget process helps ensure the long-range financial plan is continuously updated every two years to reflect any changes in underlying assumptions and/or financial policies. This approach is well suited to the dynamic environment Metropolitan operates in, rather than periodic updates of a stand-alone long-term financial planning document.

The Biennial Budget sets the stage for predictable and reasonable rate increases over the ten-year planning period. Use of operating revenue funding for the CIP will result in lower revenue requirements in later years of the forecast, as the use of operating revenues to fund the CIP will reduce the need for new money bond issues resulting in stable to lower debt service over the ten-year forecast. These lower costs combined with maintaining the ad valorem tax rate at its current level throughout the ten-year period will mitigate increases in future water rates and charges.

The Ten-Year Financial Forecast includes planning costs for the Delta Conveyance Project and the Regional Recycled Water Program. Projected annual rate increases range from 3% to 5% over the 10-year period.

Key financial indicators of the Ten-Year Financial Forecast are summarized in Figure 1.

Figure 1: Projected Rate Increases, Reserves, and Financial Indicators



| | Fiscal Year Ending | | | | | | | | | | | |
|---------------------------|--------------------|------|------|------|------|------|------|------|------|------|------|------|
| Ave Rate Increase | 3.0% | 3.0% | 3.0% | 4.0% | 5.0% | 5.0% | 4.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| Water Transactions* (MAF) | 1.42 | 1.55 | 1.60 | 1.60 | 1.60 | 1.64 | 1.69 | 1.74 | 1.74 | 1.74 | 1.75 | 1.75 |
| Rev. Bond Cvg | 1.4 | 1.5 | 1.5 | 1.5 | 1.5 | 1.7 | 2.0 | 2.1 | 2.1 | 2.1 | 2.2 | 2.3 |
| Fixed Chg Cvg | 1.4 | 1.4 | 1.5 | 1.5 | 1.5 | 1.7 | 1.9 | 1.9 | 1.8 | 1.6 | 1.7 | 1.7 |
| PAYGO, \$M | 128 | 30 | 110 | 135 | 180 | 180 | 210 | 210 | 210 | 210 | 210 | 210 |

* includes water sales, exchanges and wheeling

The Ten-Year Financial Forecast assumes the following:

- Water transactions are forecasted to increase from 1.60 MAF in FY 2020/21 to 1.75 MAF in FY 2029/30;
- 55 to 70 percent of the CIP is revenue funded;
- Metropolitan’s investments in storage programs continue, providing regional supply reliability;
- Demand Management Programs continue to be funded to incentivize the development of local water supplies and the conservation of water to reduce the need to transport water into the Metropolitan service area or within Metropolitan’s distribution system, and also help ensure that Metropolitan’s member agencies and their retail water subagencies achieve higher water use efficiency, in compliance with state policy; and
- Resulting rate increases beyond the biennial budget period are in a range of 3 percent to 5 percent each year.

Additional detail regarding Metropolitan’s ten-year forecast is contained in the Ten-Year Financial Forecast section of this Biennial Budget Document.

RESERVES

Fund balances are budgeted to be \$1.33 billion at June 30, 2021. Of that total, \$889.0 million is restricted by bond covenants, contracts, or board policy, and \$437.1 million is unrestricted. Fund balances are budgeted to be \$1.33 billion at June 30, 2022. Of that total, \$863.9 million is restricted by bond covenants, contracts, or board policy, and \$467.2 million is unrestricted.

On June 30, 2021, the targets for the minimum and target reserve funds are estimated to be \$263.1 million and \$641.7 million, respectively. Based on projected revenues and expenditures, it is estimated that the balance in the Water Rate Stabilization Fund (WRSF) and Revenue Remainder Fund will total about \$437.1 million, about \$174.0 million over the minimum level.

On June 30, 2022, the targets for the minimum and target reserve funds are estimated to be \$276.0 million and \$673.8 million, respectively. Based on projected revenues and expenditures, it is estimated that the balance in the WRSF and Revenue Remainder Fund will total about \$467.2 million, about \$191.2 million over the minimum level.

GENERAL MANAGER'S BUSINESS PLAN

The biennial budget is intended to provide funding for Metropolitan's operations, capital programs and all ancillary functions of Metropolitan for FY 2020/21 and FY 2021/22.

Over the next 24 months of the 2020-2022 budget cycle, Metropolitan will continue to face challenges in sustaining water supply reliability, investing in critical infrastructure, maintaining financial stability and transitioning to a younger and more diverse workforce. Also in this period, it will be timely for Metropolitan's Board to review policies regarding Metropolitan's role in funding and participating in local resources, take a fresh look at Metropolitan's rate structure, support efforts to stabilize the reliability of existing supply from the State Water Project, and engage in challenging policy discussions in preparation for development of the 2020 Integrated Resources Plan update. The following strategic priorities in the General Manager's Business Plan reflect the funding emphasis in the budget and highlight items that will be the focus of Board and staff attention over the next two years.

Strategic Priority #1: Resiliency

Resiliency is about making sure our staff, systems, and infrastructure are strong and can return to service quickly in a business interruption. For example, are we prepared for an extended drought, a major earthquake, a pandemic, or other large-scale disruption to routine business operations? The focus in this budget is on training, leadership development, and other efforts to support succession planning to strengthen and increase the diversity in the workforce, and on capital spending to build infrastructure reliability and redundancy.

Succession Planning

Ultimately, Metropolitan's continued success and strength depends on a skilled and experienced workforce. The biennial budget supports our succession planning efforts. We must continue to develop, train, mentor, and support staff at all levels. In 2018, roughly 50 percent of the workforce was eligible to retire. We have a successful history of filling about 90 percent of management and leadership positions and 70 percent of advanced journey positions from within the organization while hiring into the workforce at the entry level. The biennial budget recognizes how important sound succession planning is and accounts for continued training and development of our workforce.

Capital Planned Spending

Capital spending includes necessary projects for replacement and refurbishment of aging infrastructure, strengthening of infrastructure to better withstand earthquakes, improvements in the flexibility, redundancy

and integration of systems, and replacement of end-of-life systems. Planned capital spending totals \$500 million over the biennial period. Metropolitan's ability to maintain a high level of service and readiness to the member agencies underpins our resiliency.

Strategic Priority #2: Sustainability

Sustainability is about charting a long-term course that addresses the challenges before us: climate change, aging infrastructure, contaminants of emerging concern, and affordability of water supplies.

Integrated Water Resources Plan (IRP) Update

Twenty-five years after the first IRP was adopted, the 2020 IRP Update will frame challenging policy discussions for the Board to deliberate. Fundamentally, the 2020 IRP update will define the role of imported water, local resources, and conservation to meet evolving challenges. For the first time, the IRP will contemplate a future where the region's overall demand for imported water may be decreasing.

Delta Conveyance

Stabilizing the reliability of existing supply from the State Water Project through a Delta conveyance project must remain a strong policy focus. This continued effort is supported by the biennial budget. The focus over the next two years will be supporting the California Department of Water Resources as it seeks permits for a Delta conveyance project; participating in the Delta Conveyance Design and Construction Authority in its role; and continuing to put forward sound scientific research to help inform and improve Delta management decisions. The budget provides \$50 million to fund Metropolitan's planned contribution for Delta conveyance project planning activities.

Regional Recycled Water Program

The budget includes \$30 million for preparation of a programmatic environmental impact report, which is the next step before the Board will be fully informed and ready to make a decision on if, how, and when to proceed with further investments in this project.

Metropolitan Finances

Determining the right mix of revenues for a sustainable future was discussed at the Board Retreat in October. There is a great deal of history and policy embedded in the design of the current rate structure, which was last looked at in its entirety starting in 1998. The reasons for revising the rate structure then are different than the reasons that may warrant a review of the rate structure today. The incentives built into the current rate structure may or may not be the most appropriate to accomplish the goals that will flow from the IRP Update. Metropolitan will begin a review of the current rate structure in 2020 with a goal of adopting any changes to the rate structure by the end of 2021.

Strategic Priority #3: Innovation

Innovation is about continuing Metropolitan's long tradition of creatively addressing and solving difficult challenges. A recent Water Research Foundation report highlighted Metropolitan as one of the most impactful water utilities in the nation. This is in large part due to our skilled and dedicated staff. As the workforce changes, it is very important that we actively engage new employees by sharing Metropolitan's history of regional cooperation, its diverse, inclusive, and fair culture; discussing the challenges ahead and how we will overcome them; and most importantly, soliciting their innovative ideas about how Metropolitan can continuously improve its operations and business processes.



Jeffrey Kightlinger

General Manager



Katano Kasaine

Chief Financial Officer

This page intentionally left blank.

DISTRICT OVERVIEW

District Profile

The Metropolitan Water District of Southern California (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 (the Act)). Metropolitan has 26 member public agencies and its primary purpose is to provide its members with a reliable wholesale water supply service for domestic and municipal uses. To do so, Metropolitan imports water from the Colorado River and Northern California. Metropolitan also helps its member agencies develop increased water conservation, recycling, storage and other local resource programs.

Metropolitan is authorized to develop, store, and distribute water for domestic and municipal purposes and other beneficial uses if excess water is available, and may provide, generate, and deliver electric power within or without the state for the purpose of developing, storing, and distributing water. All powers, privileges and duties vested in or imposed upon Metropolitan are exercised and performed by and through its Board of Directors. Metropolitan is governed by a 38-member Board of Directors representing the 26 member agencies. Metropolitan directors are selected by their respective member agencies and some of those directors also serve on the governing body of their member agency. Board and committee meetings are open to the public and are broadcast on the Internet through Metropolitan's website, www.mwdh2o.com. A schedule of Board and committee meetings, as well as current and archived Board materials, is available at the same website.

Metropolitan was established to obtain an allotment of Colorado River water and to construct and operate the 242-mile Colorado River Aqueduct (CRA), which runs from an intake at Lake Havasu on the California-Arizona border, to an endpoint at Metropolitan's Lake Mathews reservoir in Riverside County. Metropolitan owns and operates an extensive portfolio of capital facilities including the CRA, 16 hydroelectric facilities, nine reservoirs, 830 miles of large-scale pipes, and five water treatment plants.

In 1960, Metropolitan, followed by other public agencies, signed a long-term contract with the state Department of Water Resources (DWR) to participate in the State Water Project (SWP). The SWP is the largest state-built, user-financed water supply and transportation project in the country. Its facilities were constructed with several general types of financing, the repayment of which is made by the 29 agencies and districts that participate in the SWP through long-term contracts (the State Water Contractors). The State Water Contractors also pay for the operations, maintenance, power, and replacement (OMP&R) costs of the SWP, as the State Water Contracts are the basis for all SWP construction and ongoing operations and DWR manages and operates the SWP. As the largest of the now 29 contractors, Metropolitan is entitled to slightly less than half of all SWP supplies. Water supplies from the SWP are conveyed to Metropolitan via the SWP's 444-mile California Aqueduct, which was made possible pursuant to Metropolitan's State Water Contract. The SWP serves urban and agricultural agencies from the San Francisco Bay area to Southern California.

To secure additional supplies, Metropolitan also has groundwater banking partnerships and water transfer arrangements within and outside of its service area. Metropolitan also provides financial incentives to its member agencies for local investments in water management projects and programs. An increasing percentage of Southern California's water supply comes from these local resources, including conservation, water recycling and recovered groundwater.

To pay for its costs, the Act authorizes Metropolitan to: levy property taxes within its service area; establish water rates; collect 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 is authorized to establish terms and conditions under which additional areas may be annexed to Metropolitan's service area.

Mission

The mission of Metropolitan is to provide its 5,200-square-mile service area with adequate and reliable supplies of high-quality water to meet present and future needs in an environmentally and economically responsible way.

Core Values

Metropolitan's core values include the following:

- Integrity
- Stewardship
- Diversity
- Open Communication
- Leadership
- Teamwork

Metropolitan Service Area

Metropolitan's service area comprises approximately 5,200 square miles and includes portions of the six counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura. When Metropolitan began delivering water in 1941, its service area consisted of approximately 625 square miles. Its service area has increased by 4,500 square miles since that time. The expansion was primarily the result of annexation of the service areas of additional member agencies. Metropolitan has historically provided between 40 and 60 percent of the water used annually within its service area.

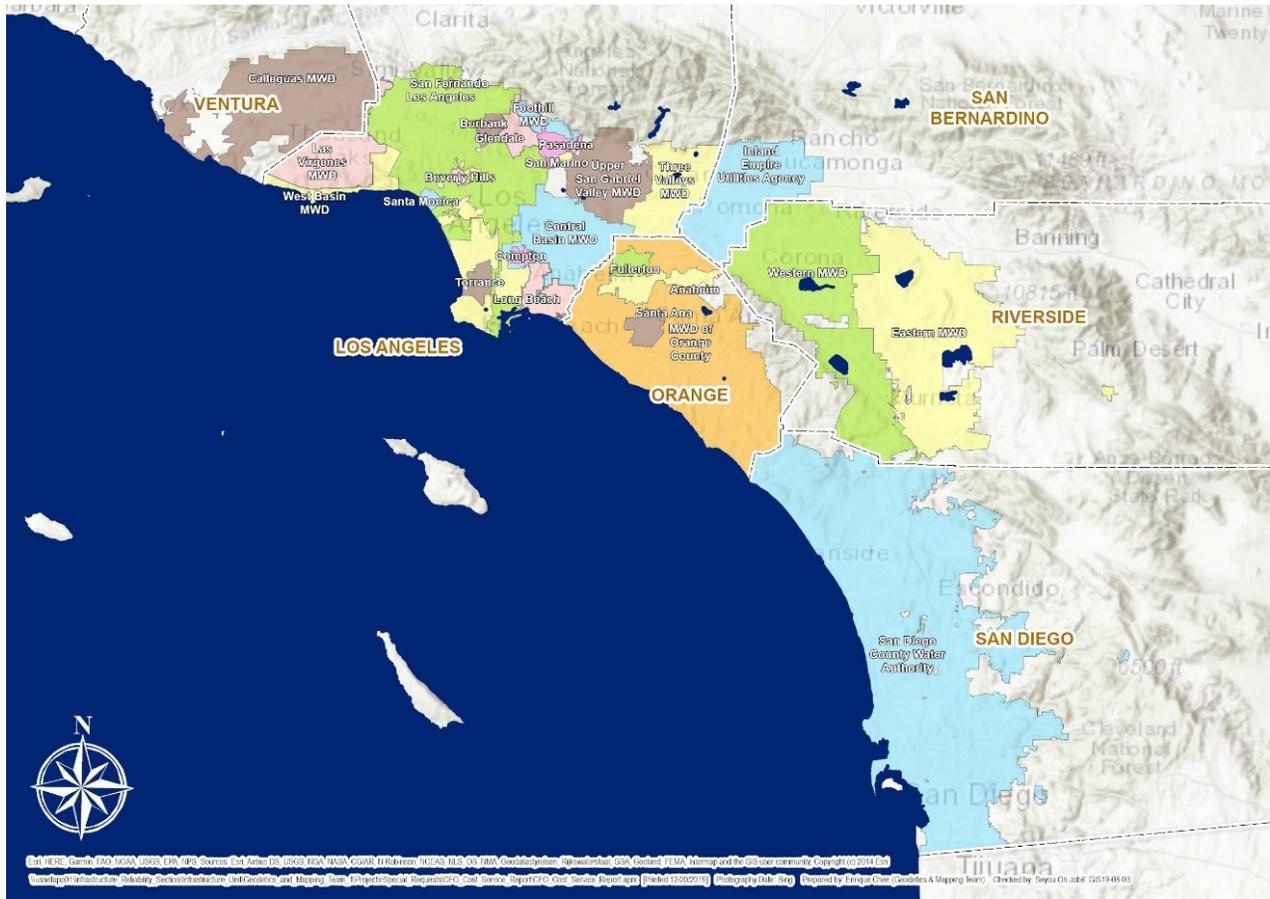
The area served by Metropolitan represents the most densely populated and heavily industrialized portions of Southern California. Metropolitan estimates that approximately 19 million people lived in Metropolitan's service area in 2019, based on official estimates from the California Department of Finance 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 2018, 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. The Six County Area economy ranked between South Korea (\$1.62 trillion) and Australia (\$1.43 trillion), with an estimated gross domestic product (GDP) of \$1.54 trillion. The Six County Area's gross domestic product in 2018 was larger than all states except California, Texas, and New York.

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

Service Area Map

The map below shows the area served by Metropolitan. It includes parts of six of the ten counties that comprise Southern California (Six County Area) consisting of Los Angeles, Orange, Riverside, San Bernardino, San Diego, and Ventura counties. Although these counties comprise Metropolitan's service area, Metropolitan's territory does not encompass all of the area within each of the six counties.



Summary of Recent Trends and Outlook for the Six County Area Economy

The national economy is in the ninth year of economic expansion. GDP growth since the third quarter of 2014 is shown below. GDP growth in the 2nd and 3rd quarters of 2019 declined to near 2%. Reported job growth averaged 189,000 per month in 2017, 204,000 per month in 2018 and 179,000 per month so far in 2019. Recent job growth has resulted in average hourly earnings rising by 3.0% over the 12 months ending October 2019 and the unemployment rate declining to 3.6% in October 2019.

On October 20, 2019, the Federal Reserve Bank lowered the federal funds rate to between 1.5% and 1.75% - the third decline in 2019. At the same time the Federal Reserve Bank signaled no more rate changes are currently planned in the near term. Inflation is now averaging close to 2% on an annual basis and wage gains have risen to about 3% on an annual basis.

The national economy faces potential slowing in the coming years from three factors - the possibility of continuing higher tariffs, a decline in labor force growth from baby boomer retirements, and slowing world economic growth. The UCLA national forecast is shown below with declining GDP and job growth in 2020 and 2021. Congressional Budget Office forecasts GDP growth of 2.1% in 2020, 1.7% for 2021-2024 and 1.8% for 2024-2029.

The Six County Area has regained all the jobs lost during the recession and more. Year-over-year job gains continued into 2019 with year-over-year gains ranging from a high of 2.3% in Riverside-San Bernardino metro area to a low of 0.4% in Ventura County. Job growth for the entire Six County Area for the 12 month ending September 2019 was 139,000 jobs or a gain of 1.5% compared to a 1.9% increase in jobs for the state and 1.5% for the nation for the comparable period. Unemployment rates in the Six County Area have declined sharply between 2010 and September 2019. In September 2019 unemployment rates ranged from a low of 2.4% in Orange County to a high of 4.5% in Los Angeles County.

California and the Six County Area are experiencing growth in both domestic and foreign visitors. Hotel rates and occupancy are increasing in the Six County Area and the same is true for employment in the hotel and amusement park sectors. In 2018 Los Angeles County set tourism records for the fourth year in a row in visitors, 50 million up 3.1% over 2017, according to data from the Los Angeles Tourism and Convention Board. In 2018 passenger travel at Los Angeles International Airport was up 3.5% to 87.5 million trips to set an all-time record. Air passenger travel at the major airports in the Six County Area reached record levels in 2018 and is up 1.9% through August 2019 to 135.3 million trips led by gains at Burbank, Ontario and San Diego airports.

Population growth in the Six County Area since 2000 compared with previous decades. Population growth slowed after 2005 as high housing prices and large job losses contributed to larger levels of out-migration to other areas of California and other states. Population growth averaged 160,000 between 2010 and 2018 according to the California Department of Finance (DOF) estimates, and growth slowed in the past three years. The Six County Area had 22.3 million residents in 2018, approximately 56% of the State's population.

Income, taxable sales and assessed valuation in the Six County Area increased since 2013 along with record levels in foreign trade and film permits. Gains in income, taxable sales and assessed valuation are all outpacing the growth in consumer price indices in the Six County Area all of which are helping local government revenue growth.

Long-term job growth is driven by the Six County Area's economic base—those sectors that sell most of their goods and services in national and world markets outside of the Six County Area. Recent projections by the Center for Continuing Study of the California Economy (CCSCE), the Southern California Association of Governments (SCAG) and the San Diego Association of Governments (SANDAG) report that the Six County Area will see job growth that slightly exceeds the national average during the next 10 to 30 years, led by gains in Professional and Business Services, Wholesale Trade, Tourism and Entertainment and Health Care.

For more demographic and economic information for Metropolitan's service area or the Six County Area, please refer to the Service Area Economy section, which includes information on:

- Job growth trends
- Construction activity
- Housing trends
- Assessed valuation
- International Trade
- Income & Wages
- Population
- Economic structure and long term prospects

Strategic Plan Summary

The General Manager submits to the Board of Directors a business plan containing the General Manager's key priorities for the coming year for review and approval.

Three strategic priorities support Metropolitan's mission for fiscal years 2020/21 and 2021/22:

Strategic Priority #1: Resiliency

Strategic Priority #2: Sustainability

Strategic Priority #3: Innovation

For more detail on the GM's strategic priorities, please refer to the General Manager's Transmittal Letter.

The General Counsel, General Auditor and Ethics Officer also submit to the Board of Directors a business plan containing their department's key priorities for the coming year for review and approval.

The groups within the General Manager department submit their business plans to the General Manager annually for review and approval. These business plans include a group mission statement and Objectives and Actions to support the relevant General Manager's strategic priorities.

Performance Indicators

Metropolitan has developed a series of performance measures that are used to measure and maintain mission-critical processes as well as support internal decision making. These include financial, water quality, human resource, legislative, outreach, etc. measures which are closely aligned with Metropolitan's business plans, key priorities and objectives.

Please see the Operating Expenditures section for Metropolitan's performance measures including fiscal year results and targets.

Organization Structure

Member Agencies

The following table lists the 26 member agencies of Metropolitan which include 11 municipal water districts, 14 cities and one county water authority.

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

Board of Directors

Metropolitan is governed by a 38-member Board of Directors. Each member public agency is entitled to have at least one representative on the Board, plus an additional representative for each full five percent of the total assessed valuation of property in Metropolitan’s service area that is within the member public agency. Changes in relative assessed valuation do not terminate any director’s term. In 2019, California Assembly Bill 1220 (Garcia) amended the Act to provide that “A member public agency shall not have fewer than the number of representatives the member public agency had as of January 1, 2019.” Accordingly, the Board may, from time to time, have more than 38 directors.

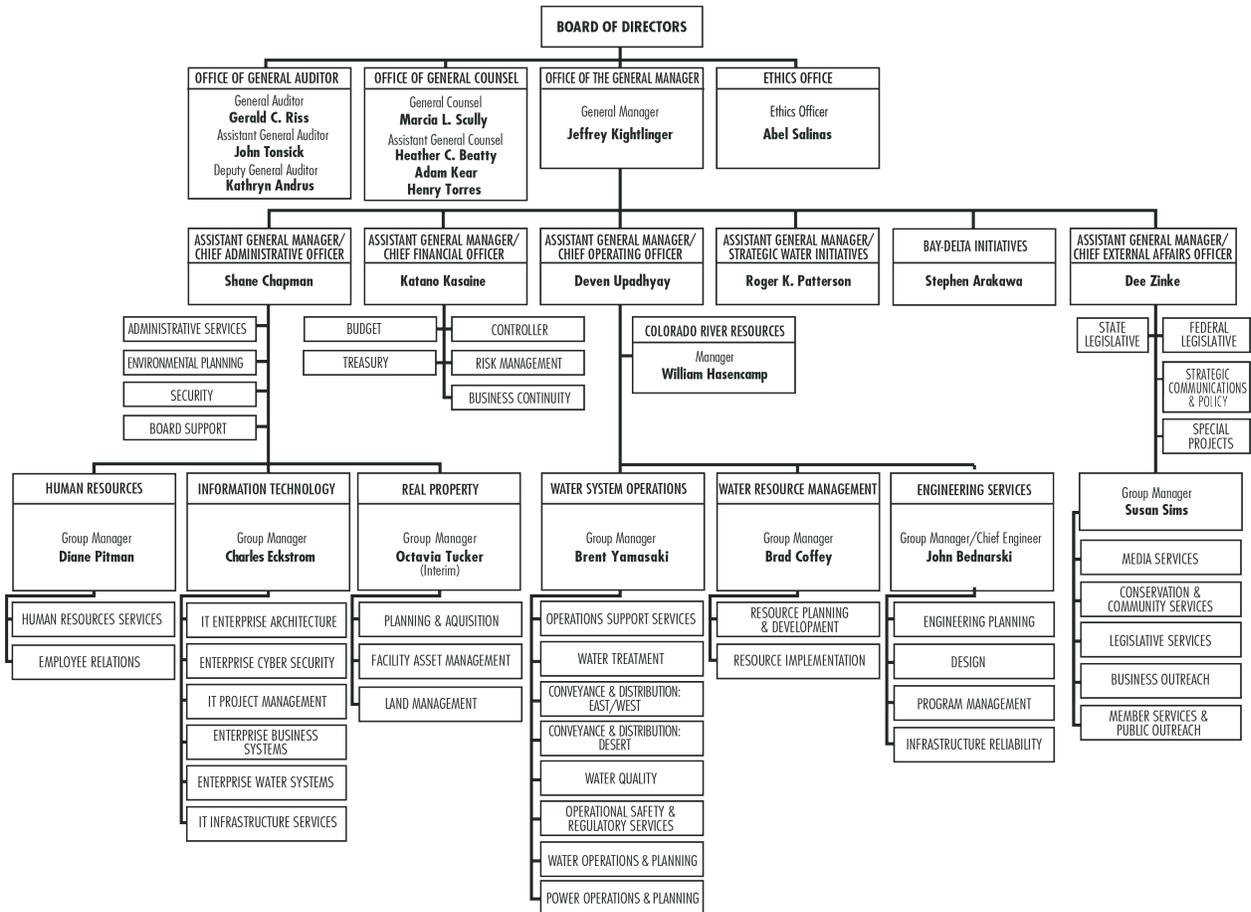
The Board includes business, professional and civic leaders. Directors serve on the Board without compensation from Metropolitan. Voting is based on assessed valuation, with each member agency being entitled to cast one vote for each \$10 million or major fractional part of \$10 million of assessed valuation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

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.

Organization Chart

A larger version is provided on the inside back cover of the Biennial Budget document.

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA



Updated as of January 22, 2020

Metropolitan Senior Management

| | |
|---------------------|--|
| Jeffrey Kightlinger | General Manager |
| Marcia Scully | General Counsel |
| Gerald Riss | General Auditor |
| Abel Salinas | Ethics Officer |
| Katano Kasaine | Assistant General Manager/Chief Financial Officer |
| Deven Upadhyay | Assistant General Manager/Chief Operating Officer |
| Shane Chapman | Assistant General Manager/Chief Administrative Officer |
| Roger Patterson | Assistant General Manager/Strategic Water Initiatives |
| Dee Zinke | Assistant General Manager/Chief External Affairs Officer |
| Rosa Castro | Board Administrator |

Workforce

Metropolitan's budget is for 1,907 regular full-time employees. Most Metropolitan employees are represented by the American Federation of State, County and Municipal Employees (AFSCME), Local 1902; the Management and Professional Employees Association (MAPA), Local 1001; the Supervisors Association; and the Association of Confidential Employees (ACE). The four bargaining units represent approximately 99 percent of Metropolitan's employees. The remaining one percent is unrepresented.

Offices

Metropolitan's headquarters are located at 700 N. Alameda St., Los Angeles, California 90012. Metropolitan has legislative offices in Sacramento and Washington D.C.



Financial Organization

Fund Structure and Descriptions (from Metropolitan's Administrative Code)

To provide for accountability of public moneys in accordance with applicable federal and state law and regulations and Board policies, the following funds active or prospectively active have been established in the Treasury of the District:

- **General Fund** (Fund No. 1001, established 1929).
 - Moneys not specifically allocated or appropriated may be placed in this fund and used for general purposes of the District.
 - Expenditures for reimbursable work and water conservation capital and indirect costs under the contract with Imperial Irrigation District are paid from this fund.
- **Replacement and Refurbishment Fund** (Fund No. 5001, established 1988).
 - Used to finance certain capital program expenditures from current revenues in accordance with Section 5109, subject to the conditions contained in Section 5202(b).
- **State Contract Fund** (Fund No. 5701, established 1960).
 - Used for the payment of capital charges under the State Water Contract, including the capital charges for off-aqueduct power facilities, subject to the conditions contained in Section 5201(d).
- **Special Tax Fund** (Fund No. 5702, established 1951).
 - Annexation fees (cash payments and special tax collections) are deposited in this fund and transferred to the State Contract Fund to pay a portion of State Water Contract capital charges.
- **Water Revenue Fund** (Fund No. 1002, established 1975).
 - Receipts from water sales are deposited in this fund and are transferred to various other funds in accordance with revenue bond covenants and Board resolutions to pay in order of priority:
 1. Operation and maintenance expenditures;
 2. Principal of, premium, if any, and interest on the Prior Lien Waterworks Revenue Bonds and any required deposits into any reserve funds or accounts therefore;
 3. The interest on and bond obligation of Subordinate Lien Water Revenue Bonds and Parity Obligations issued pursuant to Master Resolution 8329 (the Master Resolution) adopted by the Board on July 9, 1991 and any Supplemental Resolutions thereto;
 4. All other payments required for compliance with the Master Resolution, and any Supplemental Resolutions;
 5. Principal of and interest on Commercial Paper Notes and other amounts due a provider of a liquidity facility;

6. Deposits into the Water Standby Charge Fund in accordance with resolutions imposing such charges; and
 7. Any other obligations which are charges, liens, or encumbrances upon or payable from net operating revenues.
 - Moneys remaining at the end of each month, after the foregoing transfers, are transferred to the Revenue Remainder Fund.
- **Operation and Maintenance Fund** (Fund No. 1003, established 1975).
 - Used to pay all operation and maintenance expenditures, including State Water Contract operation, maintenance, power and replacement charges, subject to the conditions contained in Section 5201 (f).
 - **Revenue Remainder Fund** (Fund No. 1004, established 1975).
 - Used to maintain working capital and may be used for any lawful purpose by the District, subject to the conditions contained in Section 5202.
 - **Water Rate Stabilization Fund** (Fund No. 5501, established 1987).
 - Used to reduce future water revenue requirements or, as directed by the Board, for other lawful purposes, in accordance with Section 5202.
 - **Water Treatment Surcharge Stabilization Fund** (Fund No. 5502, established 1988).
 - Used to mitigate required increases in the surcharge for water treatment or, as directed by the Board, for other lawful purposes, in accordance with Section 5202.
 - **Revolving Construction Fund** (Fund No. 5003, established 1988).
 - Capital expenditures made from this fund are to be reimbursed from proceeds of security sales to the extent such expenditures are authorized uses of debt proceeds under the Act, subject to the conditions and restrictions contained in Section 5201(g).
 - **Employee Deferred Compensation Fund** (Fund No. 6003, established 1976).
 - Compensation deferred by employees under Section 457 of the Internal Revenue Code of 1986, as amended, is deposited in this fund and is withdrawn in accordance with Articles 2 and 3 of Chapter 7 of Division VI of this Administrative Code.
 - **Iron Mountain Landfill Closure/Postclosure Maintenance Trust Fund** (Fund No. 6005, established 1990).
 - Used as a trust fund to maintain moneys sufficient to cover the costs of closure and postclosure maintenance of the District's solid waste landfill facility at Iron Mountain, in accordance with regulations of the California Integrated Waste Management Board, and subject to the conditions contained in Section 5201(l).
 - **Water Standby Charge Fund** (Fund No. 1005, established 1992).
 - Used to separately hold revenues attributable to water standby charges; amounts deposited in this fund are used exclusively for the purpose for which the water standby charge was authorized.

- **Water Transfer Fund** (Fund No. 1007, established 1995).
 - Used for moneys set aside for the purchase of water through transfers or similar arrangements, and for the costs of filling the Eastside Reservoir Project.
- **Self-Insured Retention Fund** (Fund No. 1008, established 1999).
 - Used to separately hold amounts set aside for emergency repairs and claims against the District as provided in Section 5201(o).
- **Lake Matthews Multi Species Reserve Trust Fund** (Fund 6101, established 1997.)
 - Used as set forth in agreement between Metropolitan and the Riverside County Habitat Conservation Agency for the Multi Species Reserve.
- **Other Funds to be established for bond issues, notes or other obligations of the District**
 - There shall be established in the Treasury of the District such funds and accounts as are required pursuant to bond covenants, tax and non-arbitrage certificates, bond counsel letters of instruction and related documents, to provide for accountability of District funds and compliance with applicable federal and state law and regulations. Such funds and accounts shall be established for each issue of bonds, notes or other obligations of the District as required in the respective bond or note resolution and closing documents.
- **Water Stewardship Fund** (Fund No. 1009 established 2005).
 - Used to collect revenue from the Water Stewardship Rate and to pay costs associated with water recycling, seawater desalination, conservation, brackish water desalination, or other demand management programs. These funds can also be used to fund administrative costs associated with these programs. Funds may be used as directed by the Board, for other lawful purposes, in accordance with Section 5201(p) and Section 5202(d).

Financial Reporting

Metropolitan prepares its financial reports in conformity with generally accepted accounting principles (GAAP). The Office of the Chief Financial Officer prepares, at the conclusion of each fiscal year, the Comprehensive Annual Financial Report (CAFR) in compliance with principles and standards for financial reporting set forth by the Governmental Accounting Standards Board (GASB).

Budgetary and Accounting Basis

The budget is developed and monitored on a modified accrual basis. This means that revenues and expenses are recognized in the period they are earned and incurred regardless of whether cash has been received or disbursed. Differences between the basis of budgeting and the financial statements are minimal. Depreciation and amortization will not be recorded and payments of debt service will be recorded when due and payable. The modified-accrual basis of accounting provides a better match of revenues and expenses for budgeting and reporting.

Financial Planning

In conjunction with the development of the Biennial Budget, Metropolitan prepares a ten-year forecast (Ten-Year Financial Forecast). The ten-year forecast supports long range resource, capital investment and operational planning. It includes a forecast of future costs and the revenues necessary to support operations and investments in infrastructure and resources that are derived from the most recent Integrated Resources Plan and other planning processes.

To support Metropolitan's Biennial Budget, Ten-Year Financial Forecast, and financial planning, revenue requirements are evaluated to determine the level of rate adjustments required for the upcoming budget year. To the extent possible, increases in rates are adjusted to avoid large fluctuations.

Financial, Administrative and Operating Policies

Metropolitan establishes policies and resolutions to comply with the stipulations set forth in the Metropolitan Water District Act and Administrative Code.

The following policies are included in the appendices as a reference:

Metropolitan Water District Administrative Code:

- §. 2431. Duties and Functions
- §. 4301(a). Cost of Service and Revenue Requirement
- §. 4304. Apportionment of Revenues and Setting of Water Rates
- §. 5101. Investment of Surplus Funds
- §. 5107. Biennial Budget Process
- §. 5108. Appropriations
- §. 5109. Capital Funding from Current Revenues
- §. 5114 (a). Reporting Requirements of the Treasurer
- §. 5200. Funds Established
- §. 5201. Restricted Funds
- §. 5202. Fund Parameters
- §. 5203. Indirect Credit of District
- §. 5204. Compliance with Fund Requirements and Bond Indenture Provisions

Metropolitan Water District Act:

- §. 61: Ordinances, Resolutions and Orders
- §. 123: Borrowing, Limitation
- §. 124: Taxes, Levy & Limitation
- §. 124.5: Ad Valorem Tax Limitation
- §. 130: General Powers to Provide Water Service
- §. 133: Fixing of Water Rates
- §. 134: Adequacy of Water Rates; Uniformity of Rates
- §. 134.5: Water Standby or Availability of Service Charge
- §. 239.2: Limitation on Amount of Revenue Bonds

Other:

- Operating policy F-01. Operating, Expensed and Capital Equipment
- Operating policy F-07. Capitalization & Retirement of Plant Assets
- Statement of Investment Policy

§. 61. **Ordinances, Resolutions and Orders** grants the Board authority to make and pass ordinances, resolutions and orders.

§. 123. **Borrowing, Limitation** grants authority to a district to borrow money and incur indebtedness and issue bonds with limitation.

§. 124. **Taxes, Levy & Limitation** grants authority to a district to levy and collect taxes on all property within the district with limitation.

§. 124.5. **Ad Valorem Tax Limitation** sets forth the restrictions of a district in levying ad valorem property tax on taxable property tax within the district.

§. 130. **General Powers to Provide Water Service** sets forth the general powers of a district to provide water services.

§. 133. **Fixing of Water Rates** grants the Board authority to fix water rates.

§. 134. **Adequacy of Water Rates; Uniformity of Rates** sets forth the requirements of the Board in ensuring adequacy and uniformity of water rates.

§. 134.5 **Water Standby or Availability of Service Charge** grants the Board authority to impose a water standby charge or availability of service charge within the district.

§. 239.2. **Limitation on Amount of Revenue Bonds** sets forth limitation on amount of revenue bonds that can be issued.

§. 2431. **Duties and Functions** sets forth the duties and functions of the Engineering and Operations Committee, including studying, revising and making recommendations with regard to the District's Capital Investment Program and appropriations for capital projects.

§. 4301(a). **Cost of Service and Revenue Requirement** sets forth the revenue requirement for fixing rates for water and that such rates and charges shall reflect the costs of the District's major operational functions.

§. 4304. **Apportionment of Revenues and Setting of Water Rates** sets forth the process, requirements and timeline in which the water rates and charges are ultimately adopted by the Board.

§. 5101. **Investment of Surplus Funds** delegates to the Treasurer of the District the authority to invest or to reinvest funds of the District subject to the terms and conditions set forth in Section 5101.

§. 5107. **Biennial Budget Process** sets forth the process, requirements and timeline in which the Biennial Budget must be submitted to and adopted by the Board.

§. 5108. **Appropriations** sets forth the process and requirements for which appropriations must be approved, authorized, amended or closed.

§. 5109. **Capital Funding from Current Revenues** sets forth the requirements for funding capital from current revenues.

§. 5114(a). **Reporting Requirement of the Treasurer** sets forth the requirement of the Treasurer to render a Statement of Investment Policy for the following year, to be considered for approval by the Board.

§. 5200. **Funds Established** sets forth the active or prospectively active funds that have been established in the Treasury of the District.

§. 5201. **Restricted Funds** sets forth the conditions under which cash and securities are held in the various ledger funds.

§. 5202. **Fund Parameters** sets forth the parameters for the minimum cash and securities to be held in the various ledger funds as of June 30 of each year.

§. 5203. **Indirect Credit of District** gives the Chief Executive Officer authority to negotiate with the Department of Water Resources on the basis of using the indirect credit of the District to finance State Revenue Bonds.

§. 5204. **Compliance with Fund Requirements and Bond Indenture Provisions** sets forth the conditions under which the Chief Executive Officer assures annual compliance with minimum fund requirements and with the provisions of the covenants for all outstanding District bond issues during the preceding fiscal year.

Operating policy F-01. Operating, Expensed and Capital Equipment governs the purchase, assignment, tracking, maintenance and retirement of operating, expensed and capital equipment.

Operating Policy F-07. Capitalization & Retirement of Plant Assets establishes the policies governing the capitalization and retirement of plant assets.

Statement of Investment Policy. Per Section 5114 of the Administrative Code, the Treasurer is required to render a Statement of Investment Policy for the following fiscal year for approval by the Board and to obtain the Board's annual delegation of authority to the Treasurer to make investments on behalf of Metropolitan.

Budget Process

The budget process provides an opportunity to align shorter-term Objectives and Actions in the department and group level business plans to Metropolitan's longer-term Mission, Values, and Strategic Priorities and the needs of our member agencies. Each even numbered year, under the direction of the General Manager, a Biennial Budget is prepared for Metropolitan operations covering the following two fiscal years. The Board does have the opportunity to amend the budget as it sees fit to changing fiscal and climatic changes.

The budget is presented to the Board for consideration and adoption in April in order to align it with the adoption of water rates also approved in April. This permits incorporation of approved O&M budget expenditures into the Revenue Requirements process, which facilitates the setting of water rates. The Board and member agencies conduct extensive reviews of and provide significant input to the budget over three months from January to April. This year's budget review process included board workshops on February 10, February 25, and March 9, a public hearing on March 10, and several other presentations and caucuses with member agencies, with final approval occurring at the April 14 Board meeting.

The O&M budget is presented in an organizational format and is described in terms of its scope of work, personnel requirements, and allocation by expense category. The budget serves to identify the resource requirements for the actions and tasks each group will engage in to support the General Manager's Business Plan. The overall emphasis, consistent with Metropolitan's mission, has been on providing high quality and reliable water supplies at a fair and competitive price and in an environmental and economically responsible way.

Balanced Budget

Metropolitan considers the budget to be balanced when the sources of funds equals the uses of funds. That is, budgeted operating revenues, and on occasion the use of water rate stabilization funds, are equal to or greater than budgeted operating expenditures including debt service, and ending fund balances meet minimum policy levels. Rates and charges are set to ensure that revenues are sufficient to recover the total cash needs in a given fiscal year.

Budget Calendar

| Due Date | Activity |
|-------------------|--|
| June - November | Identification of major maintenance and capital projects and CIP Evaluation Team review of new and continuing projects. |
| August - November | Budget instructions issued to all groups. Personnel complements are developed including full-time, part-time, temporary, and overtime estimates. Group managers bring proposed budget presentations to senior management. |
| November | CIP Evaluation Team completes review of project proposals for the CIP. O&M budgets, CIP estimates, and operating equipment budgets are developed. Senior management reviews and makes final recommendations on group budgets. |
| December | Group budgets are revised as necessary. Proposed budget is finalized and materials and presentations are developed for presentation to the Board of Directors. |
| January - April | Proposed budget is presented to the Board of Directors and member agency managers. Proposed group and department budgets are presented to the relevant Board committees. Proposed annual budget workshops are conducted with the full Board and budget estimates are revised as necessary. |
| April | Finance and Insurance Committee recommends action on the Biennial Budget. Board of Directors takes action on adoption of the Biennial Budget. |

Starting in the summer, the groups identify needed major maintenance and new capital projects and develop cost estimates. In August, the budget guidelines and a calendar of budget process deadlines are issued to group, assistant group, and section managers by Budget and Financial Planning staff outlining major budget priorities consistent with the General Manager's Business Plan, staffing and operational objectives.

The development phase begins with overall program formulation and identification of individual projects, staffing, and equipment needs. Personnel budgets, including requests for temporary and part-time help, are then prepared and professional services requirements are identified. All requests for personnel, equipment purchases, and projects must be submitted with formal justifications, which address a standard set of questions developed by Budget and Financial Planning staff.

Each organization is required to identify the extent to which its proposed budget supports the General Manager's strategic priorities as outlined in the Business Plan. This information is later used to update the Business Plan in the late spring in an iterative process.

The procedures for preparation of each element of the budget are outlined below.

Labor and Professional Services Budget

The labor budget consists of regular full-time payroll, overtime, premium pay, and part-time and temporary employees. The professional services budget consists of planned payments to outside consultants for specialized skills. Personnel complements reflect the staffing of on-going work with regular employees rather than temporary employees or consultants. In addition, each group provides detailed information on consultant, overtime, and temporary employee usage. This enables senior management to examine the level and types of resources being committed to the business plan strategic priorities and make appropriate determinations for the allocation of labor resources.

Adjustments to the proposed budget are made following the review by senior management and the General Manager.

Equipment Budgets

Operating equipment is any equipment, machine, vehicle, tool, or other item that is portable, costs more than \$5,000, and has an anticipated useful life of at least five years. Expensed equipment is similar to operating equipment except that it costs less than \$5,000. All operating equipment is tracked while the tracking of expensed equipment is required for only certain classes of equipment (e.g., workstation/laptop computers, communications equipment, etc.).

The justification for equipment requests includes a description of the item, where it will be used, what it will be used for, and whether or not the item is new or a replacement. If the item is a replacement, the frequency of downtime and cost of repair of the old item versus purchasing a new one must be provided. If the item is required equipment for expanded functions or additional personnel, this must also be explained. A cost/benefit analysis is performed for equipment costing more than \$40,000.

Depending on the nature of the equipment, the requests may be evaluated by several groups. For example, each group manager and the fleet equipment coordinator review vehicle requests.

Finance Department Responsibilities

Treasury and Debt Management

- Recommend procedures for revenue collection, payment of approved demands, reporting and other actions associated with the prudent management of Metropolitan's financial resources.
- Provide for the issuance of debt to fund the capital investment plan.

Controller and Accounting Operations

- Prepare monthly expenditure and revenue reports.
- Prepare periodic reports on the status of expenditures, revenues, investments and actions taken to ensure the financial stability of Metropolitan.
- Prepare and present information on financial trends to facilitate evaluation of Metropolitan's financial position and identify conditions requiring management attention.

Budget and Financial Planning

- Support the development of the Strategic Plan that includes projections of short range and long range financial needs, and recommend methods for meeting those needs.
- Support the development of annual water rates and charges, Metropolitan's biennial operating and capital investment plan and ten year forecast.
- Prepare Metropolitan's proposed biennial operating budget and budget documents.
- Prepare budget performance reports on a monthly, quarterly, semi-annual and annual basis.
- Develop procedures and controls to monitor and assure compliance with the budget.
- Assist departments throughout the year with their budgets and financial issues.
- Prepare financial projections, schedules of rates and charges, tax rate proposals and other financial materials.

Other Department Responsibilities

Engineering

- Prepare Metropolitan's capital investment plan and CIP budget document.

General Manager Responsibilities

- Review and present to the Board of Directors long range plans, budgets and revisions, schedules of rates and charges, payments of financial demands and other financial transactions, as necessary.
- Prepare annual business plan containing General Manager's key priorities for the coming year.
- Implement emergency financial procedures within approved limits, when necessary.

Budgetary Controls

Budget requests are evaluated at several management levels. Managers and staff review budget requests during each phase of the budget process. Each request for a new project, additional personnel, or piece of operating equipment is scrutinized by each group and further reviewed by Budget and Financial Planning staff during the budget process.

All budget submittals are reviewed collectively by the group and section managers. Only those items that are deemed appropriate to support the initiatives of the General Manager’s Business Plan are included in the budget recommendation.

Once the budget is completed, the expenditures for each group are monitored on a monthly basis to ensure that the groups do not exceed the authorized operating budget for the fiscal year or biennial period, unless approved by the General Manager.

Budget Adjustments

The budget may be amended in the mid-cycle biennial review or when overall expenditures are anticipated to significantly exceed estimates. A report outlining the reasons for increasing the budget appropriation is prepared and submitted to the Board of Directors for consideration. The Board of Directors must approve any increases in the overall budget appropriations.

Capital Investment Plan (CIP)

The Capital Investment Plan (CIP) communicates the capital priorities of Metropolitan for the next two fiscal years. Within the Ten Year Financial Forecast, the CIP projects have been carefully reviewed, scored and ranked to ensure water reliability and safety while meeting all regulatory requirements.

Structure

The highest level of the CIP structure is Program. Programs are comprised of one or more Project Groups.

There are 13 capital programs which include:

- System Flexibility/Supply Reliability
- Water Quality/Oxidation Retrofit
- Colorado River Aqueduct (CRA) Reliability
- Treatment Plant Reliability
- Distribution System Reliability
- Dams & Reservoirs Improvements
- Right of Way & Infrastructure Protection
- District Housing & Property Improvements
- Prestressed Concrete Cylinder Pipe (PCCP) Reliability
- Minor Capital Projects
- Cost Efficiency & Productivity
- System Flexibility/Supply Reliability
- Regional Recycled Water Program

Definitions of the 13 capital programs can be found in the Capital Investment Plan Section of this budget book.

Preparation

The Capital Investment Plan (CIP) is prepared as part of Metropolitan's biennial budget process.

The CIP is updated to provide an overview of the financial, design, and construction status of existing projects on a quarterly basis, as well as proposals for new projects on an annual basis. All projects are reviewed and prioritized on a biennial basis by the CIP Evaluation Team.

When the need for a project is recognized, a justification is prepared which provides information regarding the expected benefits, how the work will be accomplished, the consequences of not approving the project, alternative levels of effort and cost to accomplish the project, a discussion of the impact of the project on future O&M costs, and a cost estimate for the project.

Capital projects include new facilities, betterments, and replacements that cost at least \$50,000 and have an anticipated useful life of at least five years. In the case of information technology capital projects, the cost must exceed \$250,000 and the resulting asset must have an anticipated useful life of at least three years.

The projects that comprise the proposed CIP have been identified from many Metropolitan studies of projected water needs as well as ongoing monitoring and inspections, condition assessments, and focused vulnerability studies. Staff continues to study operational demands of aging facilities and has made recommendations for capital projects that will maintain infrastructure reliability and ensure compliance with all applicable water quality regulations, and building, fire, and safety codes. Staff has also studied business and operations processes and proposed projects that will improve efficiency and provide future cost savings. Additionally, several projects have been identified and prioritized to provide flexibility in system operations to address uncertain supply conditions from the Colorado River and the State Water Project.

Capital projects can be further differentiated into two general categories: major capital and minor capital projects. Major capital projects cost at least \$400,000 and are described in the CIP under their respective Programs. Projects described in the CIP are funded and authorized to proceed under the General Manager's authority unless Board approval is otherwise required in accordance with Metropolitan's Administrative Code. Minor capital projects cost between \$50,000 and \$400,000 and are not individually described in the CIP. Minor capital projects are identified throughout each fiscal year and are funded and implemented under the General Manager's authority.

Additional information on project budgeting can be found in the Capital Investment Plan Section of this budget book.

This page intentionally left blank.

BIENNIAL BUDGET SUMMARY

APPROPRIATIONS

The FY 2020/21 appropriation of \$1,936.1 million is comprised of \$1,387.4 million or 71.7% percent for operations expense, \$298.7 million or 15.4% percent for debt service expense, and \$250.0 million or 12.9% percent for the Capital Investment Plan expenses (CIP). The FY 2021/22 appropriation of \$1,980.5 million is comprised of \$1,423.5 million or 71.9% percent for operations expense, \$307.0 million or 15.5% percent for debt service expense, and \$250.0 million or 12.6% percent for the CIP expenses. The table below provides a comparison of FY 2020/21 and FY 2021/22 and illustrates the total appropriations for the operating, debt service and CIP expenses.

FY 2020/21 and FY 2021/22 Operating and Capital Appropriations, \$ millions

| Adopted Budget | FY 2020/21 | FY 2021/22 | Total Biennium |
|--------------------|------------------|------------------|------------------|
| Operating Budget * | \$1,387.4 | \$1,423.5 | \$2,810.9 |
| Debt Service | 298.7 | 307.0 | 605.7 |
| CIP ** | 250.0 | 250.0 | 500.0 |
| Grand Total | \$1,936.1 | \$1,980.5 | \$3,916.6 |

* Includes Conservation appropriation of \$43M per year. The annual Conservation expenditures are estimated to be \$25M per year.

** CIP appropriation is \$500M over the biennium. CIP expenditures are estimated to be \$425M over the biennium.

The Biennial Budget for FY 2020/21 and FY 2021/22 provides funding for Metropolitan’s strategic priorities while meeting most financial policy guidelines, with overall rate increases of 3.0 percent in CY 2021 and 4.0 percent in CY 2022 of the Biennial Budget. The overall rate increases of 3.0 percent and 4.0 percent are consistent with the long term rate projections of 3 to 5 percent, and reflect the current environment of lower water demands as Southern California is coming off of a record wet year and local supplies are robust.

The Biennial Budget is developed and monitored on a modified accrual basis. Revenues and expenses are recognized in the period they are earned and incurred. Depreciation and amortization are not included; payment of debt service is included. The modified–accrual basis of accounting provides a better match of revenues and expenses for budgeting and reporting.

FUND SUMMARY

The following tables show fund balance, and projected revenues and expenses for Metropolitan for each fiscal year of the Biennial Budget.

FY 2020/21 Fund Summary, \$ millions

Fiscal Year Ending June 30th, 2021

| (\$ in Millions) | All Funds | Operating Funds | Debt Service and Construction Funds | Reserve Funds (1) | Other Funds (2) |
|--|----------------|-----------------|-------------------------------------|-------------------|-----------------|
| Beginning of Year Balance | 1,298.2 | 452.9 | 205.0 | 456.1 | 184.3 |
| USES OF FUNDS | | | | | |
| Expenses | | | | | |
| State Water Contract | 640.8 | 640.8 | — | — | — |
| Supply Programs | 68.7 | 68.7 | — | — | — |
| Colorado River Power | 52.2 | 52.2 | — | — | — |
| Debt Service | 298.7 | 5.7 | 293.0 | — | — |
| Demand Management (3) | 48.5 | 48.5 | — | — | — |
| Regional Recycled Water Program (planning costs) | 15.0 | 15.0 | — | — | — |
| Departmental O&M | 502.6 | 502.6 | — | — | — |
| Treatment Chemicals, Sludge & Power | 33.6 | 33.6 | — | — | — |
| Other O&M | 7.9 | 7.9 | — | — | — |
| Sub-total Expenses | 1,668.0 | 1,375.0 | 293.0 | — | — |
| Capital Investment Plan (4) | 200.0 | 30.0 | 170.0 | — | — |
| Fund Deposits | | | | | |
| R&R and General Fund | 110.0 | 30.0 | 80.0 | — | — |
| Revenue Bond Construction | 9.3 | — | 9.3 | — | — |
| Treatment Surcharge Stabilization Fund | 10.4 | — | — | — | 10.4 |
| Interest for Construction & Trust Funds | 1.1 | — | 0.2 | — | 0.9 |
| Increase in Required Reserves | 42.4 | 43.6 | 5.2 | (6.4) | — |
| Sub-total Fund Deposits | 173.2 | 73.6 | 94.7 | (6.4) | 11.3 |
| TOTAL USES OF FUNDS | 2,041.2 | 1,478.6 | 557.7 | (6.4) | 11.3 |
| SOURCES OF FUNDS | | | | | |
| Revenues | | | | | |
| Taxes | 139.9 | 132.7 | 7.3 | — | — |
| Interest Income | 19.0 | 7.2 | 3.2 | 5.9 | 2.7 |
| Power Sales | 20.8 | 20.8 | — | — | — |
| Fixed Charges (RTS & Capacity Charge) | 167.7 | 167.7 | — | — | — |
| Water Revenue (5) | 1,429.2 | 1,429.2 | — | — | — |
| Miscellaneous Revenue | 19.9 | 19.9 | — | — | — |
| Bond Proceeds | 99.3 | — | 99.3 | — | — |
| Sub-total Revenues | 1,895.9 | 1,777.5 | 109.8 | 5.9 | 2.7 |
| Fund Withdrawals | | | | | |
| R&R and General Fund | 110.0 | 30.0 | 80.0 | — | — |
| Water Stewardship Fund | 22.7 | — | — | — | 22.7 |
| Decrease in Rate Stabilization Fund | 12.6 | — | — | 12.6 | — |
| Sub-total Fund Withdrawals | 145.3 | 30.0 | 80.0 | 12.6 | 22.7 |
| TOTAL SOURCES OF FUNDS | 2,041.2 | 1,807.5 | 189.8 | 18.6 | 25.4 |
| Inter-Fund Transfers | — | (328.8) | 367.9 | (25.0) | (14.2) |
| End of Year Balance | 1,326.0 | 496.5 | 219.6 | 437.1 | 172.8 |

Totals may not foot due to rounding.

(1) includes Water Rate Stabilization Fund and Revenue Remainder Fund.

(2) includes Water Stewardship, Water Treatment Stabilization and Trust Funds.

(3) includes Conservation estimated expenditure of \$25M. The Conservation appropriation is \$43M.

(4) estimated CIP expenditures are \$200M. The CIP appropriation is \$250M.

(5) includes water sales, exchanges and wheeling

FY 2021/22 Fund Summary, \$ millions

Fiscal Year Ending June 30th, 2022

| (\$ in Millions) | All Funds | Operating Funds | Debt Service and Construction Funds | Reserve Funds (1) | Other Funds (2) |
|--|----------------|-----------------|-------------------------------------|-------------------|-----------------|
| Beginning of Year Balance | 1,326.0 | 496.5 | 219.6 | 437.1 | 172.8 |
| USES OF FUNDS | | | | | |
| Expenses | | | | | |
| State Water Contract | 654.4 | 654.4 | — | — | — |
| Supply Programs | 61.2 | 61.2 | — | — | — |
| Colorado River Power | 57.6 | 57.6 | — | — | — |
| Debt Service | 307.0 | 6.1 | 300.9 | — | — |
| Demand Management (3) | 52.5 | 52.5 | — | — | — |
| Regional Recycled Water Program (planning costs) | 15.0 | 15.0 | — | — | — |
| Departmental O&M | 522.9 | 522.9 | — | — | — |
| Treatment Chemicals, Sludge & Power | 34.8 | 34.8 | — | — | — |
| Other O&M | 7.2 | 7.2 | — | — | — |
| Sub-total Expenses | 1,712.5 | 1,411.6 | 300.9 | — | — |
| Capital Investment Plan (4) | 225.0 | 30.0 | 195.0 | — | — |
| Fund Deposits | | | | | |
| R&R and General Fund | 135.0 | 30.0 | 105.0 | — | — |
| Treatment Surcharge Stabilization Fund | 2.0 | — | — | — | 2.0 |
| Interest for Construction & Trust Funds | 1.2 | — | 0.3 | — | 0.9 |
| Increase in Required Reserves | 60.8 | 38.8 | 9.1 | 12.9 | — |
| Increase in Rate Stabilization Fund | 17.2 | — | — | 17.2 | — |
| Sub-total Fund Deposits | 216.1 | 68.8 | 114.4 | 30.1 | 2.9 |
| TOTAL USES OF FUNDS | 2,153.6 | 1,510.4 | 610.3 | 30.1 | 2.9 |
| SOURCES OF FUNDS | | | | | |
| Revenues | | | | | |
| Taxes | 140.1 | 131.8 | 8.2 | — | — |
| Interest Income | 19.3 | 7.8 | 3.4 | 6.0 | 2.1 |
| Power Sales | 21.9 | 21.9 | — | — | — |
| Fixed Charges (RTS & Capacity Charge) | 175.5 | 175.5 | — | — | — |
| Water Revenue (5) | 1,475.9 | 1,475.9 | — | — | — |
| Miscellaneous Revenue | 20.5 | 20.5 | — | — | — |
| Bond Proceeds | 89.4 | — | 89.4 | — | — |
| Sub-total Revenues | 1,942.5 | 1,833.4 | 101.0 | 6.0 | 2.1 |
| Fund Withdrawals | | | | | |
| R&R and General Fund | 135.0 | 30.0 | 105.0 | — | — |
| Bond Funds for Construction | 0.6 | — | 0.6 | — | — |
| Water Stewardship Fund | 75.5 | — | — | — | 75.5 |
| Sub-total Fund Withdrawals | 211.1 | 30.0 | 105.6 | — | 75.5 |
| TOTAL SOURCES OF FUNDS | 2,153.6 | 1,863.4 | 206.6 | 6.0 | 77.5 |
| Inter-Fund Transfers | — | (353.0) | 403.6 | 24.1 | (74.7) |
| End of Year Balance | 1,331.0 | 535.3 | 228.4 | 467.2 | 100.2 |

Totals may not foot due to rounding.

(1) includes Water Rate Stabilization Fund and Revenue Remainder Fund.

(2) includes Water Stewardship, Water Treatment Stabilization and Trust Funds.

(3) includes Conservation estimated expenditure of \$25M. The Conservation appropriation is \$43M.

(4) estimated CIP expenditures are \$225M. The CIP appropriation is \$250M.

(5) includes water sales, exchanges and wheeling

SOURCES OF FUNDS

Total Sources of FY 2020/21 and FY 2021/22 Funds, \$ millions

| | 2019/20 Budget | 2020/21 Budget | 2021/22 Budget | 2019/20 Budget Compared to 2020/21 Budget | 2020/21 Budget Compared to 2021/22 Budget |
|---|-------------------|-------------------|-------------------|---|---|
| SOURCES OF FUNDS | | | | | |
| Revenues | | | | | |
| Taxes | 118.1 | 139.9 | 140.1 | 21.9 | 0.1 |
| Interest Income | 18.1 | 19.0 | 19.3 | 1.0 | 0.2 |
| Power Sales | 19.1 | 20.8 | 21.9 | 1.7 | 1.2 |
| Fixed Charges (RTS & Capacity Charge) | 165.8 | 167.7 | 175.5 | 2.0 | 7.8 |
| Water Revenues (1) | 1,528.5 | 1,429.2 | 1,475.9 | (99.3) | 46.7 |
| Miscellaneous Revenue | 11.5 | 19.9 | 20.5 | 8.4 | 0.5 |
| Bond Proceeds and Reimbursements | 79.4 | 99.3 | 89.4 | 19.9 | (9.9) |
| Sub-total Revenues | 1,940.4 | 1,895.9 | 1,942.5 | (44.5) | 46.6 |
| Fund Withdrawals | | | | | |
| R&R and General Fund | 120.0 | 110.0 | 135.0 | (10.0) | 25.0 |
| Bond Funds for Construction | 0.6 | — | 0.6 | (0.6) | 0.6 |
| Water Stewardship Fund | — | 22.7 | 75.5 | 22.7 | 52.8 |
| Decrease in Water Rate Stabilization Fund | — | 12.6 | — | 12.6 | (12.6) |
| Sub-total Fund Withdrawals | 120.6 | 145.3 | 211.1 | 24.8 | 65.8 |
| TOTAL SOURCES OF FUNDS | 2,060.9 | 2,041.2 | 2,153.6 | (19.7) | 112.4 |

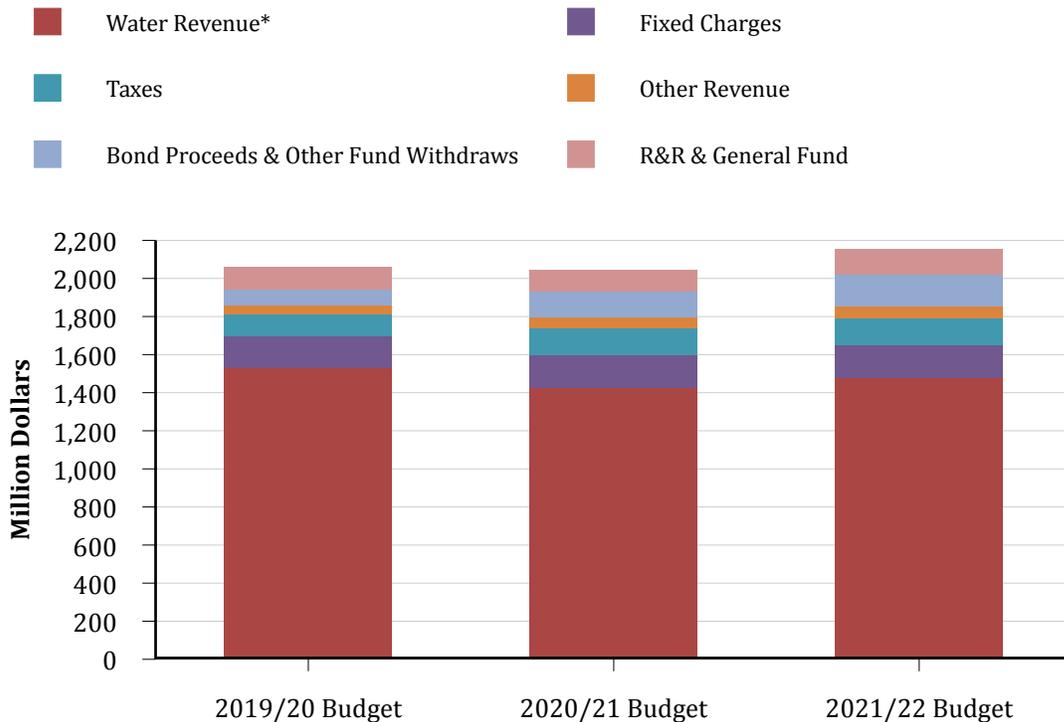
Totals may not foot due to rounding.

(1) includes water sales, exchanges and wheeling

OPERATING REVENUE

Estimated revenues from water rates, fixed charges (Readiness-To-Serve Charge and Capacity Charge), taxes and annexation fees, and other miscellaneous income (interest income, power recovery, etc.) are projected to be \$1.80 billion for FY 2020/21 and \$1.85 billion for FY 2021/22. For FY 2020/21, this is \$64.6 million less than the FY 2019/20 budget, and for FY 2021/22, this is \$56.7 million more than FY 2020/21. The decrease in revenues for FY 2020/21 is due to lower water transactions in calendar year 2021. For FY 2021/22, the revenue is higher due to higher water rates and charges in calendar year 2021 and calendar year 2022. In addition, the forecast assumes the ad valorem tax rate is maintained at 0.0035 percent of assessed valuations. A description of each revenue source is included in the Glossary of Terms.

Sources of Funds FY 2020/21 and FY 2021/22, \$ millions

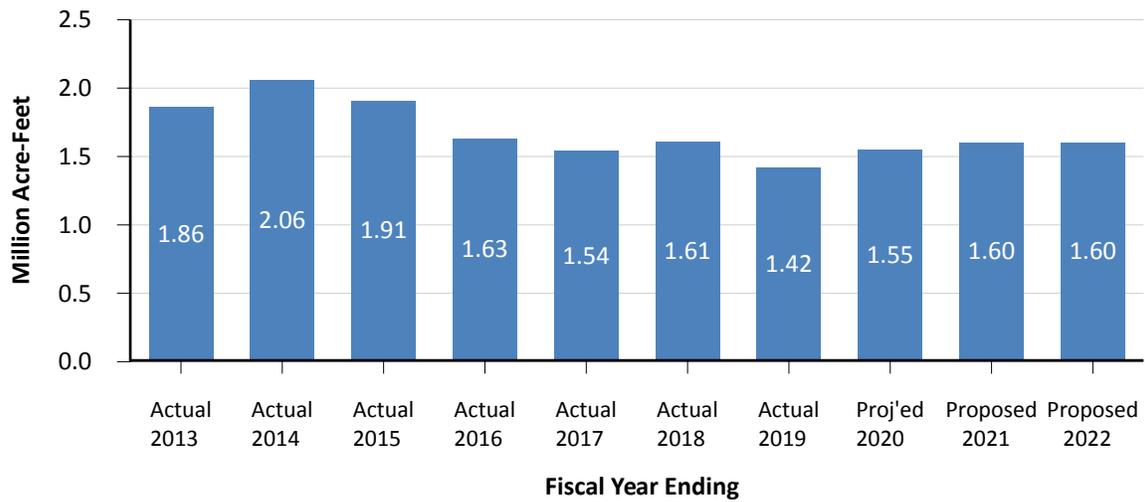


* includes water sales, exchanges and wheeling

Water Revenues

Revenues from water transactions are budgeted at \$1,429.2 million in FY 2020/21 and \$1,475.9 million in FY 2021/22. Water rates and charges are to increase by 3.0 percent overall effective January 1, 2021 and 4.0 percent overall effective January 1, 2022. Water transactions for each FY 2020/21 and FY 2021/22 are estimated to be 1.6 million acre-feet (MAF), a decrease of 150 thousand acre-feet (TAF) from the FY 2019/20 budget. Water transactions are forecasted to be lower than the FY 2019/20 budget as southern California is coming off of a record wet year and local supplies are robust. The lower water transactions projection also reflects the expectation that demands will trend lower due to consumer response to the previous drought and continued conservation initiatives.

Water Transactions Trend, MAF



The FY 2020/21 fiscal year water transactions include 1.32 MAF of full-service sales, of which 850 TAF (or 53 percent) are treated water sales, and 276 TAF of exchange water to the San Diego County Water Authority (SDCWA) pursuant to the 2003 Amended and Restated Exchange Agreement (exchange water). The FY 2021/22 fiscal year water transactions include 1.32 MAF of full-service sales, of which 850 TAF (or 53 percent) are treated water sales, and 281 TAF of exchange water. No wheeling transactions are projected in the biennium period. The figure above shows the trend of water transactions.

Taxes and Annexation Fees

Revenues from taxes, which will be used to pay voter-approved debt service on general obligation bonds and a portion of the capital costs of the SWP, are estimated to be \$139.9 million in FY 2020/21 and \$140.1 million in FY 2021/22.

The ad valorem tax rate is assumed to remain at the current level of 0.0035 percent of assessed value in both fiscal years; assessed valuations are projected to increase by 2.5 percent each fiscal year.

Fixed Charges

Fixed charges include the Capacity Charge and Readiness-to-Serve Charge. In FY 2020/21, these charges are estimated to generate \$34.7 million and \$133.0 million, respectively. In FY 2021/22, these charges are estimated to generate \$40.5 million and 135.0 million, respectively. In total this represents a \$1.9 million increase from the FY 2019/20 to FY 2020/21 budget, and a \$7.8 million increase from the FY 2020/21 to the FY 2021/22 budget. Fixed charges are increasing in FY 2020/21 due to higher peak demands on the distribution system. Fixed charges are increasing in FY 2021/22 due to increases in capital financing costs.

All Other Revenue

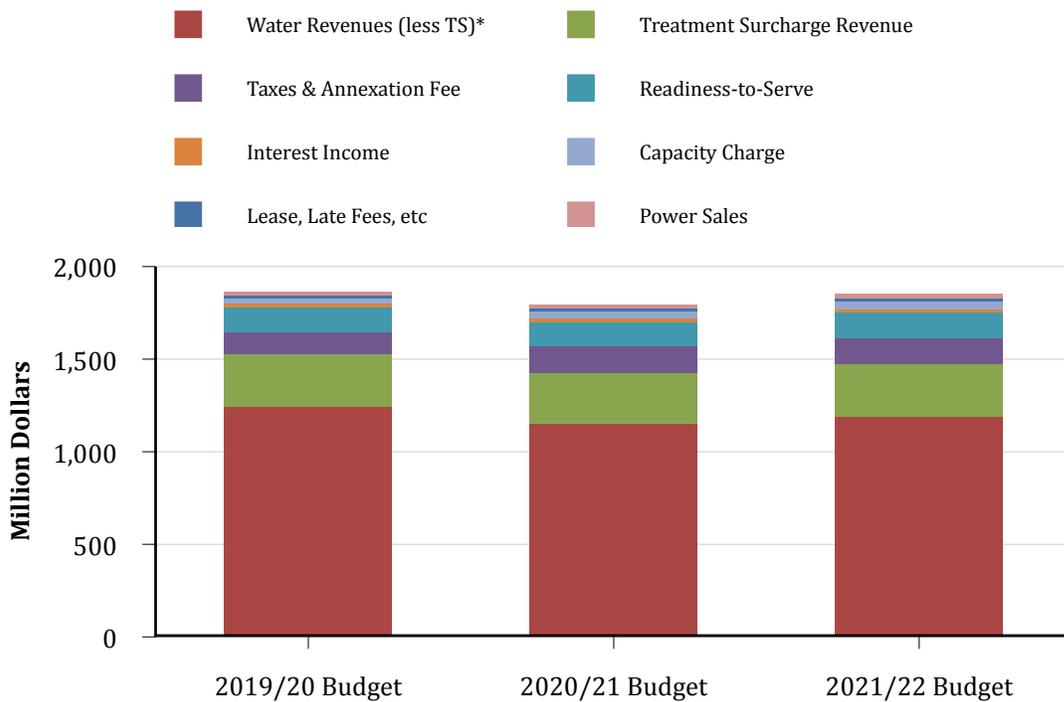
Revenues from hydroelectric and CRA power sales are estimated to be \$20.8 million for FY 2020/21 and \$21.9 million for FY 2021/22. FY 2020/21 is higher than the FY 2019/20 budgeted amount of \$19.1 million due to higher wholesale prices.

Miscellaneous revenues, which includes items such as interest income, lease revenues, and water transactions with non-member agencies, are estimated to total \$39.0 million for FY 2020/21 and \$39.7 million for FY

2021/22 , higher than the FY 2019/20 budgeted amounts of \$29.6 million, mainly due to increased water transactions with non-member agencies.

A summary of operating revenues is shown in the graph below.

Operating Revenues, \$ millions



* includes water sales, exchanges and wheeling

CAPITAL FUNDING

The FY 2020/21 and FY 2021/22 Capital Investment Plan (CIP) will be funded with bond proceeds and current operating revenues (PAYGO). It is anticipated that Metropolitan will issue new revenue bonds of \$100 million in FY 2020/21 and \$90 million in FY 2021/22 to fund a portion of the CIP. The remaining CIP expenditures will be funded with revenue funded capital of \$110 million in FY 2020/21 and \$135 million in FY 2021/22.

Please refer to the section on debt financing for additional details on debt funding of capital projects.

Capital Funding Source Descriptions

New Bond Issues

Metropolitan has the ability to issue long-term bonds to fund its capital programs. The proceeds of the bond sales can be used to pay for capital expenses over several years. The repayment of the bonds is generally over 30 years and is paid from water revenues.

Revenue Funded Capital

Annual capital expenses that are not paid from debt funding, grants, or loans must be paid from revenues, either from current year revenues or from the R&R fund, if funds exist.

USES OF FUNDS

Total uses of funds are \$2.0 billion for FY 2020/21 and \$2.2 billion for FY 2021/22. The table and graph below show the breakdown of expenditures and other obligations that make up the Uses of Funds.

Total Uses of FY 2020/21 and FY 2021/22 Funds, \$ millions

| | 2019/20 Budget | 2020/21 Budget | 2021/22 Budget | 2019/20 Budget Compared to 2020/21 Budget | 2020/21 Budget Compared to 2021/22 Budget |
|--|-------------------|-------------------|-------------------|--|--|
| USES OF FUNDS | | | | | |
| Expenses | | | | | |
| State Water Contract (1) | 589.5 | 615.8 | 629.4 | 26.3 | 13.6 |
| Supply Programs | 54.4 | 68.7 | 61.2 | 14.3 | (7.5) |
| Delta Conveyance planning costs | 13.0 | 25.0 | 25.0 | 12.0 | — |
| Regional Recycled Water Program planning costs | — | 15.0 | 15.0 | 15.0 | — |
| Colorado River Power | 52.9 | 52.2 | 57.6 | (0.7) | 5.3 |
| Debt Service | 330.9 | 298.7 | 307.0 | (32.2) | 8.3 |
| Demand Management (2) | 85.8 | 48.5 | 52.5 | (37.3) | 4.0 |
| Departmental O&M | 461.7 | 502.6 | 522.9 | 40.9 | 20.3 |
| Treatment Chemicals, Sludge & Power | 27.7 | 33.6 | 34.8 | 5.9 | 1.2 |
| Other O&M | 7.0 | 7.9 | 7.2 | 0.9 | (0.7) |
| Sub-total Expenses | 1,623.0 | 1,668.0 | 1,712.5 | 45.1 | 44.5 |
| Capital Investment Plan (3) | 200.0 | 200.0 | 225.0 | — | 25.0 |
| Fund Deposits | | | | | |
| R&R and General Fund | 120.0 | 110.0 | 135.0 | (10.0) | 25.0 |
| Revenue Bond Construction | — | 9.3 | — | 9.3 | (9.3) |
| Water Stewardship Fund | 4.8 | — | — | (4.8) | — |
| Treatment Surcharge Stabilization Fund | 16.5 | 10.4 | 2.0 | (6.1) | (8.4) |
| Interest for Construction & Trust Funds | 0.2 | 1.1 | 1.2 | 0.8 | 0.1 |
| Increase in Required Reserves | 41.3 | 42.4 | 60.8 | 1.1 | 18.4 |
| Increase in Water Rate Stabilization Fund | 55.2 | — | 17.2 | (55.2) | 17.2 |
| Sub-total Fund Deposits | 238.0 | 173.2 | 216.1 | (64.8) | 42.9 |
| TOTAL USES OF FUNDS | 2,060.9 | 2,041.2 | 2,153.6 | (19.7) | 112.4 |

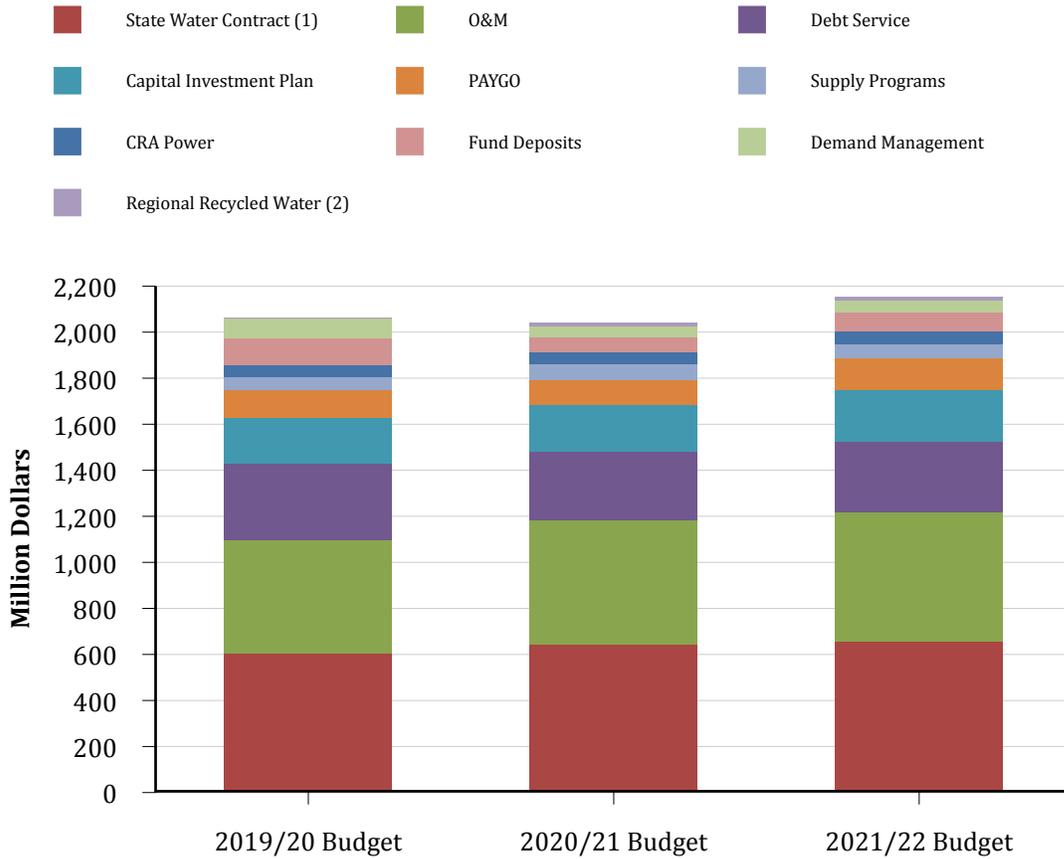
Totals may not foot due to rounding.

(1) without Delta conveyance planning costs

(2) The annual Conservation expenditures are estimated to be \$25M per year. The Conservation appropriation is \$43M per year.

(3) CIP expenditures are estimated to be \$200M in FY 2020/21 and \$225M in FY 2021/22. The CIP appropriation is \$500M over the biennium.

Total Uses of FY 2020/21 and FY 2021/22 Funds, \$ millions



(1) includes Delta conveyance planning costs
 (2) only includes program planning costs

Colorado River Aqueduct Power

CRA power costs are projected to be \$52.2 million in FY 2020/21 and \$57.6 million in FY 2021/22 based on diversions of approximately 745 TAF in FY 2020/21 and 733 TAF in FY 2021/22. FY 2020/21 is \$0.7 million lower than the FY 2019/20 budget due to lower diversions at Intake. FY 2021/22 is \$5.3 million higher than FY 2020/21 due to a new greenhouse gas charge to be collected by the California Air Resources Board.

Please refer to the section on the CRA for additional details on this expense.

State Water Project

State Water Contract (SWC) expenditures, not including the Delta conveyance planned contribution described below, are budgeted at \$615.8 million for FY 2020/21 and \$629.4 million in FY 2021/22. This is based on Metropolitan's deliveries to MWD's service area of 1,063 TAF in FY 2020/21 and 1,059 TAF in FY 2021/22. SWP power costs are expected to be \$211.0 million for FY 2020/21 and \$216.2 million for FY 2021/22. Power costs are higher than FY 2019/20 budget due to higher water deliveries and a projected increase in the California Independent System Operator (ISO) transmission access charge (TAC) by the State Water Contractors.

The forecasted amount for SWP expenditures reflects incorporation of rate management credits into the forecast. Rate management credits result from a provision of the State Water Contract that provides for the

reduction of capital charges based on differences between the Department of Water Resources' collections from the SWP contractors and the actual amounts paid for capital-related charges.

The total State Water Contract expenditure budget of \$640.8 for FY 2020/21 and \$654.4 for FY 2021/22 includes Metropolitan's planned contribution of \$25 million per year for Delta conveyance project planning activities.

Please refer to the section on the SWP for additional details on this expense.

Regional Recycled Water Program Planning Costs

The FY 2020/21 and FY 2021/22 budget includes funding for planning costs for the potential Regional Recycled Water Program at \$15 million per year for preparation of a programmatic environmental impact report. This is the next step before the Board will be fully informed and ready to make a decision on whether to proceed with further investments in this potential project.

Demand Management Costs

Demand management includes conservation programs, programs to incentivize the development of local water resources, Future Supply Actions Program, and the Stormwater Pilot Program. Metropolitan provides financial incentives to its member agencies for the development of local projects such as water recycling and groundwater recovery projects through the Local Resource Program (LRP). Metropolitan also provides financial incentives for the development of conservation programs. Demand Management is budgeted at \$48.5 million for FY 2020/21 and \$52.5 million in FY 2021/22.

Please refer to the section on Demand Management for additional details on this expense.

Supply Programs

Metropolitan's two principal sources of supply draw from two different watersheds. This has allowed Metropolitan to draw more heavily on one source in the event the other is experiencing a drought. To further ensure regional supply reliability, Metropolitan has developed a portfolio of additional supply programs on both watersheds. Total expenditures are budgeted at \$68.7 million for FY 2020/21 and \$61.2 million in FY 2021/22.

Please refer to the section on the Supply Programs for additional details on this expense.

OPERATIONS AND MAINTENANCE

The FY 2020/21 O&M budget, including operating equipment purchases, is \$544.1 million. This is \$47.8 million, or 9.6% percent, higher than the FY 2019/20 budget of \$496.4 million. The FY 2021/22 O&M budget is \$564.9 million, an increase of \$20.7 million, or 3.8% percent, over the FY 2020/21 budget.

Departmental Budget by Organization (without operating equipment, succession planning labor pool and overhead credit), \$ millions



Operations and Maintenance Budget by Organization, \$ thousands

| Departmental Units | 2019/20 Budget | 2020/21 Budget | 2021/22 Budget | 2019/20 Budget vs. 2020/21 Budget | % Change | 2020/21 Budget vs. 2021/22 Budget | % Change |
|--|--------------------|--------------------|--------------------|--|-------------|--|-------------|
| Office of the General Manager | \$5,224.1 | \$5,550.6 | \$5,769.5 | \$326.4 | 6.2% | \$218.9 | 3.9% |
| Water System Operations w/o Variable Treatment | 217,290.8 | 232,169.6 | 243,917.9 | 14,878.9 | 6.8% | 11,748.3 | 5.1% |
| Water Resource Management | 25,066.0 | 24,371.3 | 25,346.2 | (694.7) | (2.8%) | 974.9 | 4.0% |
| Engineering Services | 33,865.0 | 38,382.5 | 40,425.6 | 4,517.5 | 13.3% | 2,043.1 | 5.3% |
| Bay Delta Initiatives | 10,246.2 | 10,095.9 | 9,709.4 | (150.3) | (1.5%) | (386.5) | (3.8%) |
| Office of Chief Administrative Officer | 34,281.9 | 38,057.0 | 38,653.5 | 3,775.1 | 11.0% | 596.5 | 1.6% |
| Information Technology | 43,661.5 | 47,653.4 | 49,640.0 | 3,991.9 | 9.1% | 1,986.6 | 4.2% |
| Real Property | 28,447.1 | 30,553.4 | 29,878.1 | 2,106.3 | 7.4% | (675.3) | (2.2%) |
| Human Resources | 12,881.5 | 14,277.1 | 14,868.3 | 1,395.6 | 10.8% | 591.2 | 4.1% |
| Chief Financial Officer | 25,198.1 | 27,949.2 | 28,833.2 | 2,751.0 | 10.9% | 884.1 | 3.2% |
| External Affairs | 27,577.0 | 27,867.1 | 28,858.3 | 290.2 | 1.1% | 991.1 | 3.6% |
| Subtotal - General Manager's Department | 463,739.3 | 496,927.1 | 515,900.1 | 33,187.8 | 7.2% | 18,973.0 | 3.8% |
| General Counsel | 15,202.3 | 16,003.0 | 17,752.3 | 800.7 | 5.3% | 1,749.3 | 10.9% |
| Office of the General Auditor | 3,855.0 | 4,521.7 | 4,750.2 | 666.7 | 17.3% | 228.4 | 5.1% |
| Ethics Department | 1,448.4 | 1,621.4 | 1,679.9 | 173.0 | 11.9% | 58.5 | 3.6% |
| Overhead Credit from Construction | (22,554.0) | (23,436.3) | (24,203.5) | (882.3) | 3.9% | (767.2) | 3.3% |
| Succession Planning Labor Pool | — | 7,000.0 | 7,000.0 | 7,000.0 | NA | — | NA |
| Total Departmental Budget | 461,691.0 | 502,636.9 | 522,878.9 | 40,946.0 | 8.9% | 20,242.0 | 4.0% |
| Operating Equipment | 6,955.4 | 7,878.5 | 7,153.4 | 923.1 | 13.3% | (725.1) | (9.2%) |
| Variable Treatment | 27,713.9 | 33,616.8 | 34,818.7 | 5,902.9 | 21.3% | 1,201.9 | 3.6% |
| GRAND TOTAL | \$496,360.3 | \$544,132.2 | \$564,851.1 | \$47,771.9 | 9.6% | \$20,718.9 | 3.8% |

Totals may not foot due to rounding

The table above depicts the distribution of the departmental O&M by organization without the overhead credit, succession planning labor pool and operating equipment. Including treatment costs, the Water System Operations (WSO) group accounts for 48 percent of the total departmental budget for FY 2020/21 and FY 2021/22. Information Technology is the second largest departmental expenditure area, accounting for 9 percent of the total departmental budget for FY 2020/21 and FY 2021/22. A summary of the O&M budget by organization is shown in the table above. The table below summarizes the O&M budget by expenditure type. A more detailed discussion of significant factors impacting the O&M budget follows.

FY 2020/21 and FY 2021/22 Operations & Maintenance Annual Budget by Expenditure Type, \$ thousands

| | 2019/20 Budget | 2020/21 Budget | 2021/22 Budget | 2019/20 Budget vs. 2020/21 Budget | 2020/21 Budget vs. 2021/22 Budget |
|---------------------------------|-------------------|-------------------|-------------------|--|--|
| Salaries & Benefits (1) | \$322,637.6 | \$354,161.1 | \$373,823.0 | \$31,523.5 | \$19,661.8 |
| Chemicals, Sludge and Power (2) | 27,713.9 | 33,616.8 | 34,818.7 | 5,902.9 | 1,201.9 |
| Outside Services | 52,638.1 | 56,534.4 | 56,436.7 | 3,896.3 | (97.7) |
| Materials & Supplies (3) | 27,510.2 | 31,714.9 | 33,058.7 | 4,204.7 | 1,343.7 |
| Other | 58,905.1 | 60,226.4 | 59,560.6 | 1,321.4 | (665.8) |
| Operating Equipment | 6,955.4 | 7,878.5 | 7,153.4 | 923.1 | (725.1) |
| Total | 496,360.3 | 544,132.2 | 564,851.1 | 47,771.9 | 20,718.9 |

Totals may not foot due to rounding

(1) includes succession planning labor pool and overhead credit for construction.

(2) costs associated with treatment only.

(3) without chemicals associated with treatment plants.

FY 2020/21 O&M Budget Highlights

The FY 2020/21 O&M budget includes \$544.1 million for labor and benefits, water treatment chemicals, power, and solids handling, materials and supplies, professional services, and operating equipment purchases. This is \$47.8 million, or 9.6 percent, higher than the FY 2019/20 budget of \$496.4 million.

Salaries and Benefits: Labor costs, not including those charged to construction are \$354.2 million. This is \$31.5 million, or 9.8 percent, higher than the FY 2019/20 budget of \$322.6 million. Key increases include negotiated labor increases of \$14.1 million, or 44.8 percent of the increase; a succession planning labor pool of \$7.0 million, or 22.2 percent of the increase; increases in retirement, medical and other benefits of \$5.4 million, or 17.1 percent of the increase; and temporary labor increases of \$2.9 million or 9.0 percent of the increase.

The FY 2020/21 budget includes 1,907 regular full time positions which are flat from the FY 2019/20 budget and 43 district temporary full-time equivalents (FTEs) which are increasing by 20 net positions for a total of 1,950 authorized positions.

Over the biennium a total of 14 district temporary positions will be added to support increased recruitment, enhanced security, land management, and maintenance efforts, enhanced business process and business systems support, and ongoing succession planning efforts. Twenty district temporary positions will be added in the first year of the budget but 6 district temporary positions will be phased out in the second year with the completion of temporary work assignments.

The budget recognizes the importance of sound succession planning and continued training and development of the workforce with a \$7 million succession planning labor pool included in each FY 2020/21 and FY 2021/22 budget for advance recruitment, apprenticeship and internship programs.

Outside Services: Outside Services are anticipated to increase by \$3.9 million primarily as a result of enhanced security, land management, and maintenance efforts; a comprehensive rate restructuring study; increased environmental and regulatory compliance and monitoring such as the Surface Mining & Reclamation Act (SMARA); and critical cybersecurity, cloud and IT infrastructure services.

Materials & Supplies: Materials & Supplies is increasing by \$4.2 million primarily as a result of software licensing and support, and land management and maintenance efforts. Metropolitan has adopted a Cloud First strategy for business applications. As systems are moved to the cloud, software license costs that were previously captured as capital are now expensed as O&M per accounting requirements. In the long term, moving and hosting business applications in the cloud will prove to be more cost effective, and provide for greater operational flexibility and resiliency.

Other O&M and Operating Equipment: Chemicals, solids, and power reflect the cost of the water treatment process and are anticipated to increase by \$5.9 million in FY 2020/21, driven by an increase in treated water deliveries and chemical prices. The FY 2020/21 budget reflects an increase in the contribution by Metropolitan to advance efforts on collaborative science through various State, Federal and other agencies of about \$0.5 million. In addition, the FY 2020/21 budget reflects an increase of about \$0.8 million related to property taxes and the fees paid to the Department of Safety of Dams (DSOD). Operating equipment is higher by \$0.9 million primarily due to the replacement of critical survey equipment and end-of-life IT infrastructure.

FY 2021/22 O&M Budget Highlights

The FY 2021/22 O&M budget is \$564.9 million, an increase of \$20.7 million, or 3.8 percent, compared to the FY 2020/21 budget. This increase is primarily due to negotiated labor increases and increases in retirement, medical and other benefits. The increase in chemical costs and software licensing and support is offset by a decrease in property maintenance and operating equipment costs.

Salaries and Benefits: The FY 2021/22 O&M labor budget is about \$19.7 million or 5.6 percent higher than the FY 2020/21 budget. Negotiated labor increases represent \$15.5 million, or 78.7 percent of the increase. Increases in retirement, medical and other benefits represent \$5.5 million, or 27.7 percent of the increase. The remaining \$1.3 million decrease, or 6.4 percent, is primarily attributable to a reduction in the number of temporary labor positions from the FY 2020/21 budget.

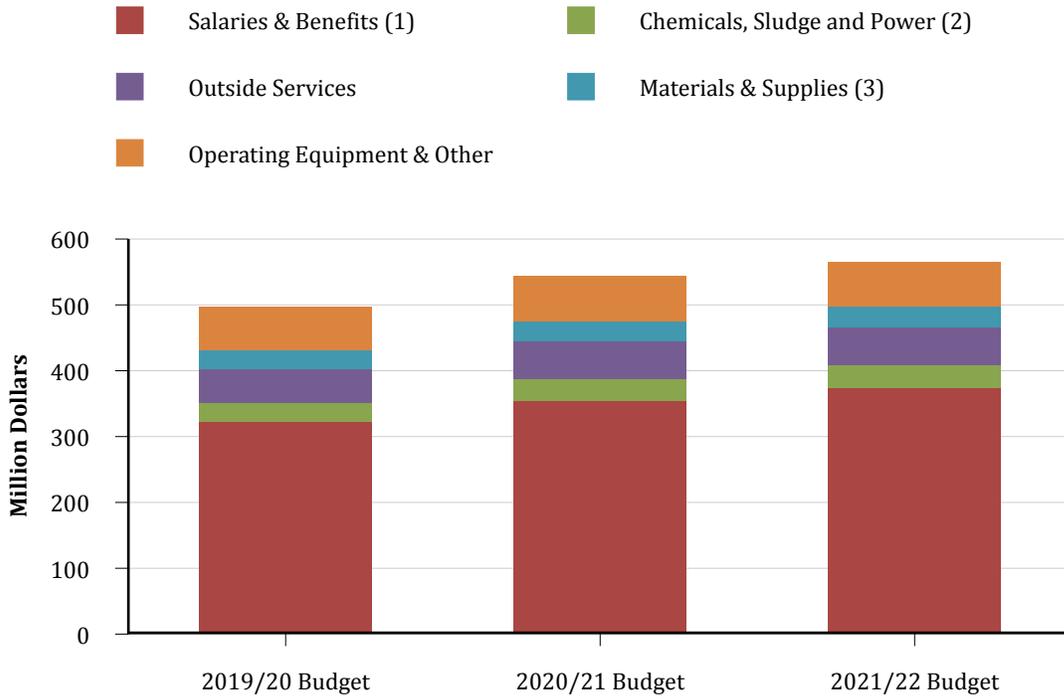
FY 2021/22 regular full time positions are flat with the FY 2020/21 budget but district temporary positions are decreasing by 6 net positions. As a result FY 2021/22 total authorized positions are decreasing from 1,950 to 1,944.

Outside Services: Outside Services are anticipated to decrease by \$0.1 million. A reduction in property maintenance costs are being offset by an increase in outside services related to the potential Regional Recycled Water Program (RRWP) and desert infrastructure and communication services.

Materials & Supplies: Materials & Supplies is increasing by \$1.3 million primarily as a result of District software licensing and support, and materials and supplies related to the potential Regional Recycled Water Program.

Other O&M and Operating Equipment: The cost of chemicals, power, and sludge disposal incurred in the water treatment process is anticipated to increase slightly by \$1.2 million in FY 2021/22 due primarily to inflationary pressures on chemical costs. Other O&M is lower due primarily to the completion of the PC replacement and seismic headquarters relocation projects in FY 2020/21 offset by increases in taxes and permits and desert infrastructure and communication services. Operating equipment is lower by \$0.7 million from FY 2020/21 due primarily to a reduction in IT infrastructure and survey equipment needs.

Departmental Budget by Expenditure Type, \$ millions



(1) includes succession planning labor pool and overhead credit for construction.

(2) costs associated with treatment only.

(3) without chemicals associated with treatment plants.

The figure above summarizes the total departmental O&M budget by expenditure type, of which about 65 percent is for salaries and benefits in both FY 2020/21 and FY 2021/22.

STAFFING PLAN

Total regular full time positions of 1,907 remain flat over the biennium. Including temporary positions, total authorized positions for FY 2020/21 and FY 2021/22 are 1,950 and 1,944 positions respectively. Total personnel increase by 20 district temporary positions (rounded) in FY 2020/21 and decrease by 6 district temporary positions (rounded) to a total in FY 2021/22.

Over the biennium, positions dedicated to O&M work are expected to increase by one regular full time position with the shift of a position from capital work, and by 14 district temporary positions to support increased recruitment, enhanced security, land management and maintenance efforts, enhanced business process and business systems support, and ongoing succession planning efforts.

The personnel complement is shown in the following tables.

Regular and Temporary Positions

| | 2018/19 Budget | 2019/20 Budget | 2020/21 Budget | 2021/22 Budget | 2019/20 Budget vs. 2020/21 Budget | 2020/21 Budget vs. 2021/22 Budget |
|------------------------------|-------------------|-------------------|-------------------|-------------------|--|--|
| Regular Full Time Positions | 1,900 | 1,907 | 1,907 | 1,907 | — | — |
| District Temporary Positions | 22 | 23 | 43 | 37 | 20 | (6) |
| Total | 1,922 | 1,930 | 1,950 | 1,944 | 20 | (6) |

Totals may not foot due to rounding.

* restated FY 2019/20 to reflect 2 positions subsequently authorized by the board for the General Counsel and Audit departments.

O&M and Capital Staffing Levels

| | 2019/20 Budget | 2020/21 Budget | 2021/22 Budget |
|------------------------------|-------------------|-------------------|-------------------|
| O&M Positions | | | |
| Regular Full Time Positions | 1,622 | 1,622 | 1,623 |
| District Temporary Positions | 21 | 41 | 35 |
| Total O&M | 1,643 | 1,663 | 1,658 |
| Capital Positions | | | |
| Regular Full Time Positions | 285 | 285 | 284 |
| District Temporary Positions | 2 | 2 | 2 |
| Total Capital | 287 | 287 | 286 |
| GRAND TOTAL | 1,930 | 1,950 | 1,944 |

Totals may not foot due to rounding.

CAPITAL INVESTMENT PLAN

Estimated expenditures for the Capital Investment Plan (CIP) which includes Minor Capital Projects are \$425 million for FY 2020/21 and FY 2021/22. The budget assumes that CIP expenditures will be 80% of planned spending of \$250 million, or \$200 million, in FY 2020/21. In FY 2021/22, CIP expenditures are assumed to be 90% of planned spending of \$250 million or \$225 million. Estimated CIP expenditures are anticipated to be lower in the first year of the biennium as a result of the impact of the COVID-19 crisis on project schedules. CIP expenditures are anticipated to be funded by current operating revenues (i.e., PAYGO) and by issuing new revenue bonds. The FY 2020/21 CIP expenditures are unchanged from the FY 2019/20 budget, and for FY 2021/22, \$25 million higher than the FY 2020/21 budget.

The largest area of expenditures in the FY 2020/21 and FY 2021/22 CIP is Infrastructure Reliability. It is currently anticipated that infrastructure expenditures will continue to grow as more facilities reach the end of their service life and require rehabilitation and refurbishment.

The CIP is discussed in more detail in the CIP supplemental volume.

Cash Funded Capital

The CIP is anticipated to be funded 55 percent by current operating revenues (PAYGO) in FY 2020/21 and in FY 2021/22, the CIP is anticipated to be funded 60 percent by PAYGO. The PAYGO funding for FY 2020/21 is budgeted at \$110 million and in FY 2021/22, the PAYGO funding is budgeted at \$135 million.

Debt Funded Capital

The CIP is anticipated to be funded 45 percent by revenue bond proceeds in FY 2020/21 and in FY 2021/22, the CIP is anticipated to be funded 40 percent by revenue bond proceeds. New debt issues are planned in FY 2020/21 in the amount of \$100 million, and in FY 2021/22 in the amount of \$90 million. Given construction funds expected to be available at the beginning of the biennial budget period and planned PAYGO amounts, these bond issues should provide sufficient funds to meet CIP expenditures over the two years.

Debt Service

For FY 2020/21 and FY 2021/22, Metropolitan plans to issue new revenue bond debt as described above. Debt service payments in FY 2020/21 are budgeted at \$298.7 million and \$307.0 million in FY 2021/22.

Please refer to the section on Capital Financing for additional details on this expense.

FUND BALANCES AND RESERVES

Metropolitan operates as a single enterprise fund for financial statements and budgeting purposes. Through its Administrative Code, Metropolitan identifies a number of accounts, which are referred to as funds, to separately track uses of monies for specific purposes as summarized in the table below.

The FY 2020/21 budget forecasts a \$19.7 million decrease in reserves by June 30, 2021 and includes the Water Rate Stabilization Fund (WRSF) and the Revenue Remainder Fund. In addition, the Treatment Surcharge Stabilization Fund (TSSF) and the Water Stewardship Fund (WSF) are projected to decrease by \$12.4 million.

The FY 2021/22 budget forecasts a \$30.1 million increase in reserves by June 30, 2022 and includes the WRSF and the Revenue Remainder Fund. In addition, the TSSF is projected to increase by \$6.7 and the WSF is projected to decrease by \$75.6 million.

Fund balances are budgeted to be \$1.33 billion at June 30, 2021. Of that total, \$889.0 million is restricted by bond covenants, contracts, or board policy, and \$437.1 million is unrestricted. Fund balances are budgeted to be

\$1.33 billion at June 30, 2022. Of that total, \$863.9 million is restricted by bond covenants, contracts, or board policy, and \$467.2 million is unrestricted.

On June 30, 2021, the minimum and target levels for the reserve funds are estimated to be \$263.1 million and \$641.7 million, respectively. Based on projected revenues and expenditures, it is estimated that the balance in the WRSF and Revenue Remainder Fund will total about \$437.1 million, about \$174.0 million over the minimum level.

On June 30, 2022, the minimum and target levels for the reserve funds are estimated to be \$276 million and \$673.8 million, respectively. Based on projected revenues and expenditures, it is estimated that the balance in the WRSF and Revenue Remainder Fund will total about \$467.2 million, about \$191.2 million over the minimum level.

Projected Fund Balances, \$ millions

| | Restricted | Designated | Unrestricted | Total |
|------------------------------|--------------|--------------|--------------|----------------|
| 2020/21 Adopted | | | | |
| Operating Funds | 426.5 | — | — | 426.5 |
| Debt Service Funds | 197.6 | — | — | 197.6 |
| Construction Funds | 17.7 | 4.4 | — | 22.1 |
| Reserve Funds (1) | — | — | 437.1 | 437.1 |
| Rate Stabilization Funds (2) | — | 113.8 | — | 113.8 |
| Trust and Other Funds | 129.0 | — | — | 129.0 |
| Total June 30, 2021 | 770.7 | 118.2 | 437.1 | 1,326.0 |
| 2021/22 Adopted | | | | |
| Operating Funds | 465.3 | — | — | 465.3 |
| Debt Service Funds | 206.7 | — | — | 206.7 |
| Construction Funds | 17.3 | 4.4 | — | 21.7 |
| Reserve Funds (1) | — | — | 467.2 | 467.2 |
| Rate Stabilization Funds (2) | — | 40.3 | — | 40.3 |
| Trust and Other Funds | 129.9 | — | — | 129.9 |
| Total June 30, 2022 | 819.1 | 44.7 | 467.2 | 1,331.0 |

Totals may not foot due to rounding.

(1) includes Water Rate Stabilization Fund and Revenue Remainder Fund.

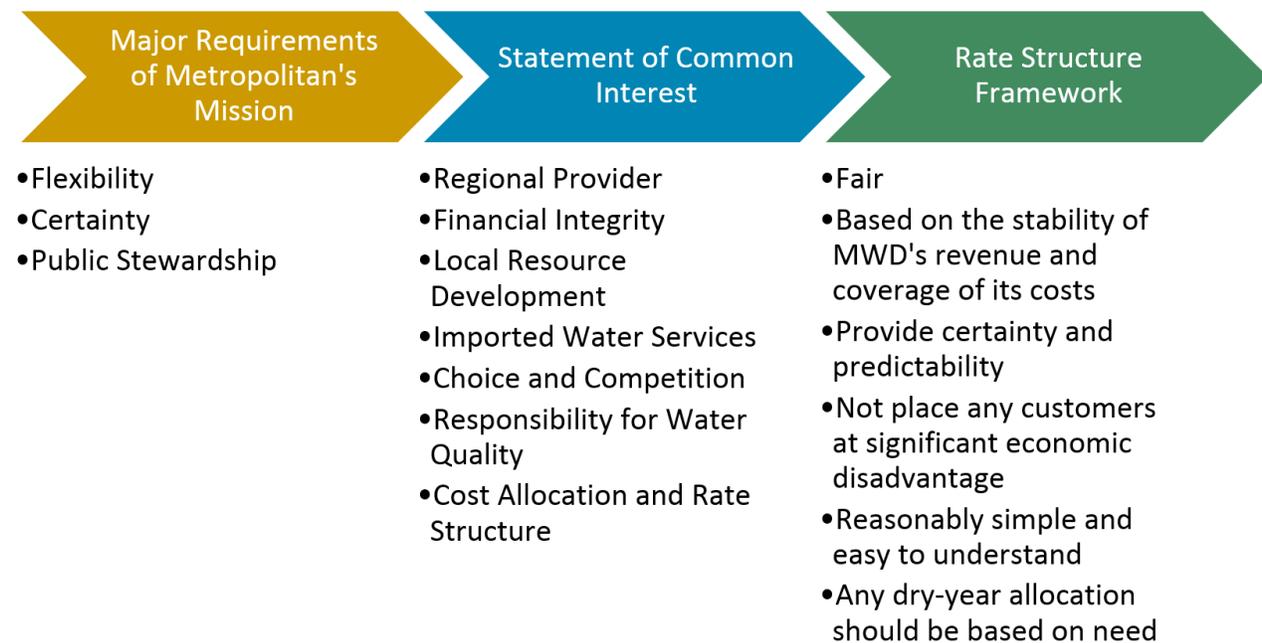
(2) includes Water Stewardship Fund and Treatment Surcharge Stabilization Fund

RATE STRUCTURE OVERVIEW

Framework

The Rate Structure Framework evolved through a comprehensive strategic planning process initiated in 1998. As depicted in the following figure, the first step of the process was to identify the “Major Requirements of Metropolitan’s Mission,” which was reflected in the Strategic Plan Policy Principles. The Statement of Common Interests formed the basis of Metropolitan’s strategic plan to address these mission requirements. One of the most important common interests was “Cost Allocation and Rate Structure.” In determining the most appropriate Cost of Service (COS) and rate structure, a set of pricing objectives, or guiding rate principles, was developed. These guiding rate principles defined Metropolitan’s Rate Structure Framework by which various COS and` rate-setting methodologies could be evaluated.

Development of the Rate Structure Framework



The strategic planning process which established the foundation of the Rate Structure Framework is discussed below.

Major Requirements of Metropolitan’s Mission

As one of the first steps in the strategic planning process in 1998, the Board developed a list of three mission requirements in its Metropolitan vision statement - flexibility, certainty, and public stewardship:

- **Flexibility.** Metropolitan is aware of the legislative and economic pressures which make flexibility in providing water services for a changing demand and in a competitive water market paramount. Fair compensation for wheeling through Metropolitan’s conveyance systems is an essential element of Southern California’s developing market.
- **Certainty.** The certainty that Metropolitan’s water supply is reliable and that the COS is appropriate is of utmost importance to member agencies and their retailers who are endeavoring to provide not only water, but value to the residents in their service area.
- **Public Stewardship.** As public stewards of much of Southern California’s water supply, Metropolitan and its member agencies are responsible for making certain that the water is provided in a cost-effective and environmentally sound manner.

Statement of Common Interests

From the strategic planning mission requirements, the Board developed a list of seven areas of common interest that formed the major focus elements of the Metropolitan strategic plan:

- **Regional provider.** This area includes the concerns of protecting regional infrastructure and providing service during drought periods. Regional water must be provided to meet the needs of the member agencies, and water supplies must be equitably allocated during drought periods based on the Water Surplus and Drought Management Plan principles.
- **Financial integrity.** It is a common interest of the members for Metropolitan to assure the financial integrity of the agency in all aspects of its operations.
- **Local resource development.** Metropolitan supports local resources development by working in partnership with its member agencies and by providing member agencies with financial incentives for water conservation and for local projects.
- **Imported water service.** Metropolitan is responsible for providing imported water to meet the committed needs of its member agencies.
- **Choice and competition.** After Metropolitan provides imported water for the member agencies’ committed demands, a member agency can choose the most cost-effective additional water supplies for its customers. These choices include either Metropolitan, local resource development, market transfers, or some combination of these secondary options. Metropolitan and its member agencies can decide how to provide these additional supplies collaboratively while balancing local, imported, and market opportunities with affordability.
- **Responsibility for water quality.** Metropolitan must advocate source water quality and implement in-basin water quality for the imported water it supplies. This is necessary to guarantee compliance with primary drinking water standards and to meet the water quality requirements for water recycling and ground water replenishment.
- **Cost allocation and rate structure.** The framework for a revised rate structure will be established to address allocation of costs, financial commitment, unbundling of services, and fair compensation for services including wheeling, peaking, growth, and others.

Rate Structure Framework

A major element of common interest was “*Cost Allocation and Rate Structure.*” In addressing this element a set of pricing objectives, or guiding rate principles, had to be developed to evaluate alternative COS and rate setting approaches, or methodologies. As a result, the Board adopted a set of rate principles which was defined as the *Rate Structure Framework*. The Rate Structure Framework provided the principles for the Strategic Planning Steering Committee to develop a preferred rate structure. The Rate Structure Framework includes the following principles:

- The rate structure should be *fair*;
- It should be based on the *stability* of Metropolitan’s revenue and coverage of its costs;
- It should provide certainty and predictability;
- It should not place any customers at *significant economic disadvantage*;
- It should be reasonably *simple and easy to understand*; and
- Any dry-year allocation should be *based on need*.

The 2001 COS and rate structure was adopted by the Board to address the Rate Structure Framework.

RATE STRUCTURE DESIGN

The elements of the rate structure, and the rates and charges for calendar year 2020, 2021, and 2022 are summarized in Table 14.

Table 14. Rate Elements

| Rate Design Elements | Functional Costs Recovered | Type of Charge | 2020 | 2021 | 2022 |
|---------------------------|---|--------------------|---------|----------|----------|
| Tier 1 Supply Rate | Supply, Drought Storage | Volumetric (\$/af) | \$208 | \$243 | \$243 |
| Tier 2 Supply Rate | Reflects cost of transfers from north of the Delta | Volumetric (\$/af) | \$295 | \$285 | \$285 |
| System Access Rate | Conveyance/Distribution (Average Capacity), portion of Regulatory/Emergency Storage | Volumetric (\$/af) | \$346 | \$373 | \$389 |
| Water Stewardship Rate | Demand Management | Volumetric (\$/af) | \$65 | — | — |
| System Power Rate | Power on CRA and SWP | Volumetric (\$/af) | \$136 | \$161 | \$167 |
| Treatment Surcharge | Treatment | Volumetric (\$/af) | \$323 | \$327 | \$344 |
| Capacity Charge | Peak Distribution Capacity, portion of Regulatory Storage | Fixed (\$/cfs) | \$8,800 | \$10,700 | \$12,200 |
| Readiness-to-Serve Charge | Available Conv. & Dist. Capacity, Emergency Storage | Fixed (\$M) | \$136 | \$130 | \$140 |

*Rates and Charges effective January 1st

Supply Rates

Purpose

The rate structure recovers supply costs through a two-tiered price structure. The amount of water a member agency may purchase at the lower Tier 1 Supply Rate, which is water within a member agency's Tier 1 maximum, is established by either a purchase order agreement or calculated as 60% of its Revised Base Firm Demand.

Tier 1 Supply Rate

The Tier 1 Supply Rate is a volumetric rate charged on Metropolitan's water sales that are within a member agency's Tier 1 maximum. The Tier 1 Supply Rate supports a regional integrated approach through the uniform, postage stamp rate. The Tier 1 Supply Rate is calculated as the amount of the total revenue requirement functionalized as supply divided by the estimated amount of Tier 1 water sales.

Tier 2 Supply Rate

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 is charged on Metropolitan water sales that exceed a member agency's Tier 1 maximum. 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.

Implementation

Because the Tier 1 maximum is set at a total member agency level and not at a meter level, all system water delivered will be billed at the Tier 1 Supply Rate. Any water delivered that exceeds the Tier 1 maximum will be billed an additional amount equivalent to the difference between the Tier 2 and Tier 1 Supply Rates.

For member agencies without purchase orders and member agencies with purchase orders that accrue a cumulative Tier 2 obligation at the end of year five of the purchase order, the Tier 2 Supply Rate will be applied in the month where the Tier 1 maximum is surpassed on all applicable deliveries. Otherwise, any obligation to pay the Tier 2 Supply Rate will be calculated over the ten-year period, consistent with the calculation of any purchase order commitment obligation.

Benefits

The use of the two-tiered structure for Supply Rates provides several benefits including (1) efficient resource management, and (2) clear price signals to accommodate a water transfer market.

System Access Rate (SAR)

Purpose

The SAR recovers the costs of Conveyance, Distribution, and Storage that is used on an average annual basis through a uniform, volumetric rate. All member agencies pay the SAR for access to conveyance and distribution capacity in the Metropolitan system.

Implementation

The SAR is charged for each acre-foot of water transported by Metropolitan, regardless of the ownership of the water being transported. All users (member agencies and third-party wheelers) using the Metropolitan system to transport water pay the same SAR for the use of the system conveyance and distribution capacity used to meet average annual demands.

As explained further below, the rate for wheeling service which has included the SAR is inapplicable in calendar years 2021 and 2022.

Benefits

The SAR benefits include: (1) support of a regional approach; (2) accommodates a water transfer market that does not unfairly advantage one user over another; (3) provides a clear linkage between costs and benefits; and (4) establishes a simple approach to recovering the costs of conveyance and distribution functions.

Water Stewardship Rate (WSR)

Purpose

The WSR provided a dedicated source of funding for Metropolitan's demand management function through a uniform, volumetric rate recovered through the end of calendar year 2020. Metropolitan's demand management operations functions include past and future conservation and local resources projects. Because of the uniform benefits conferred on all system users by investments in conservation and local resources, all users of Metropolitan's conveyance and distribution system paid the WSR except for exchange deliveries to SDCWA in calendar years 2018 through 2020.

Implementation

The WSR was charged to each acre-foot of water delivered by Metropolitan through the end of calendar year 2020, regardless of the water being transported, except for the noted exchange deliveries. All system users 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 Program and Local Resources Program. Therefore, all users paid the WSR through the end of calendar year 2020, except on water delivered to SDCWA pursuant to the exchange agreement in calendar years 2018, 2019, and 2020.

Metropolitan's Board suspended the billing and collection of the WSR for calendar years 2018, 2019, and 2020 on exchange deliveries pending Metropolitan's completion of a cost allocation study of its demand management costs. Having completed the demand management cost allocation process, in December 2019 Metropolitan's Board directed staff: (1) to incorporate the use of the 2019/20 fiscal-year-end balance of the Water Stewardship Fund to fund all demand management costs in the FY 2020/21 and 2021/22 biennial budget; and (2) to not incorporate the WSR, or any other rates or charges to recover demand management costs, with the rates and charges for CYs 2021 and 2022. This decision provided the Board additional time to consider a rate design alternative for recovery of future demand management costs.

Therefore, as a result of this Board decision, the WSR is not incorporated in this COS analysis and Report. The full-service rate will not include the WSR element during the biennial period. Further, because the rate at Metropolitan Administrative Code Section 4405(b) for wheeling service to member agencies for a period of up to one year-as defined in Sections 4119 and 4405(a)-includes the Water Stewardship Rate, the rate for wheeling service at Section 4405(b) is deemed inapplicable during that period. Any wheeling service to any member agency pursuant to Section 4405(a) will be provided at a price for the transaction to be agreed upon by Metropolitan and the member agency (as is already the case for wheeling of over one year to member agencies and wheeling of any duration to third parties).

System Power Rate (SPR)

Purpose

The SPR recovers the costs of energy required to pump water to Southern California through the SWP and CRA. The cost of power is recovered through a uniform, volumetric rate.

Implementation

The SPR is applied to all deliveries of Metropolitan water to member agencies. Under Metropolitan Administrative Code Section 4405(b), member agencies pay for actual cost (not system average) of power needed to move the water for wheeling transactions under Section 4405(a). Therefore, the SPR is not applicable to wheeling arrangements. However, as explained above, the rate for wheeling service at Section 4405(b) is not applicable during the biennial time period. Still, it is anticipated that charges for wheeling by any party will include the actual costs of power needed to move water and not the SPR. For example, a third-party wheeling water through the California Aqueduct would pay the variable power cost associated with using the SWP transportation facilities.

Benefits

The primary benefit of the SPR is that it clearly identifies Metropolitan's average cost of power.

Treatment Surcharge

Purpose

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.

Implementation

The Treatment Surcharge is charged to all treated water transactions.

Benefits

There are several benefits provided by the treatment surcharge, including that (1) only treated water users pay for the costs of treatment, and (2) by averaging the costs of providing treated water service over the entire system the regional economies of scale are preserved.

Capacity Charge

Purpose

The Capacity Charge recovers the costs incurred to provide peak capacity within the Distribution System. The Capacity Charge also 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, resulting in more efficient utilization of Metropolitan's existing infrastructure and deferring capacity expansion costs.

Implementation

Each member agency will pay the Capacity Charge per cubic feet per second (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.

Benefits

The Capacity Charge provides several benefits including (1) increasing the overall efficiency of water use, (2) improving the fair allocation of costs among member agencies based upon the demand imposed by each agency, and (3) providing a source of fixed revenue.

Readiness–To–Serve Charge (RTS)

Purpose

The RTS recovers the cost of the portion of system that is available to provide emergency service and available capacity during outages and hydrologic variability.

Implementation

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 are included for purposes of calculating the ten-year rolling average. The SDCWA Exchange Water transactions are excluded from the calculation of the ten-year rolling average per the terms of the Amended and Restated Agreement between the Metropolitan Water District of Southern California and the San Diego County Water Authority for the Exchange of Water. The Standby Charge is collected at the request of some member agencies that have elected to use the charge as a direct offset to the member agency's RTS obligation.

Benefits

The RTS provides two major benefits, which includes (1) a better matching of costs and benefits, and (2) a SAR that recovers only those costs associated with providing average annual service.

Purchase Order Option

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.

UNDERSTANDING THE LAYOUT OF THE DEPARTMENTAL BUDGET

DEPARTMENTAL/GROUP BUDGET

The Departmental Section provides detailed information about the Operations and Maintenance (O&M) budget of each group and department and consists of the following:

Mission

Describes, at a high level, the scope of the organization's functions.

Programs

Describes the organizations roles and responsibilities by program or section and provides a summary organizational chart.

Goals & Objectives

Summarizes the goals & objectives each organization proposes to accomplish in the upcoming fiscal years.

O&M Financial Summary

Provides a summary of the organization's O&M budgets. For FY 2018/19 and FY 2019/20, O&M expenditures are identified by expense categories such as salaries and benefits, professional services, and "other" expenditures and incorporate the group objectives.

Expense Category

| Category | Description |
|------------------------------|---|
| <i>Salaries and Benefits</i> | Labor costs and fringe benefits for Metropolitan's regular, district temporary, and agency temporary employees. Total salaries and benefits, direct charges to capital, and O&M salaries are shown. |
| <i>Professional Services</i> | All costs associated with work performed by outside contractors and consultants. |
| <i>Operating Equipment</i> | Costs associated with the purchase of capitalized portable equipment, including automobiles, trucks, servers, and other applicable portable equipment. |
| <i>Other</i> | Cost of purchasing chemicals, materials and supplies, reprographics, travel, telephone, and other necessary items for effective operation of Metropolitan. A breakdown has been provided to itemize those expense categories that are five percent or more of the "other" category. |

O&M Budget by Section

Provides a summary of the organization's O&M budget and personnel count by section or program.

Personnel Summary

Provides a breakdown for the organization of total personnel involved in O&M and capital work.

Budget Highlights

Identifies the major factors of the budget variance over the biennium as well as any significant changes by budget year.

OFFICE OF THE GENERAL MANAGER

The Office of the General Manager manages and administers all Metropolitan activities except those functions specifically delegated by statutes and Board order to the General Counsel, General Auditor, or Ethics Officer.

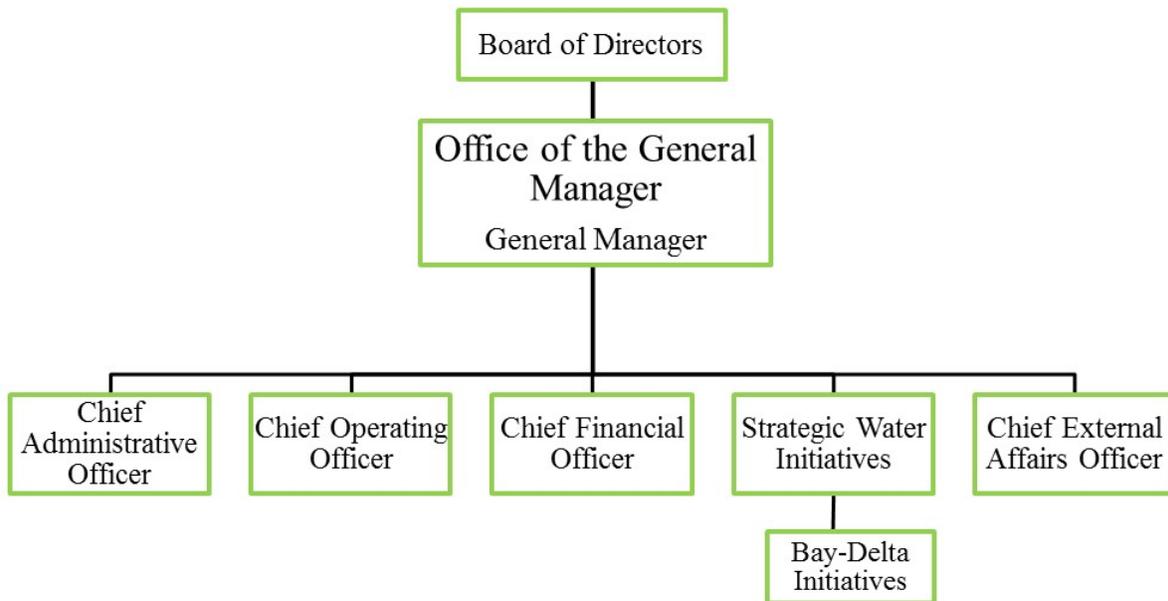
PROGRAMS

The Office of the General Manager is responsible for the management and administration of Metropolitan's activities including the management of all matters pertaining to the business of the Board and research on actions and policies of the Board by staff for directors, member agencies, and the public.

the Office of the General Manager. It is now a separate group. Also, the Board Support Team is now under the Chief Administrative Officer.

The Board of Directors provides policy and direction as the governing body of the Metropolitan Water District.

The reporting structure of the Office of the General Manager is reflected below. In the prior biennial budget, Bay Delta Initiatives was reflected under



GOALS AND OBJECTIVES

The following strategic priorities in the General Manager’s Business Plan reflect the funding emphasis in the budget and highlight items that will be the focus of Board and staff attention over the next two years.

Strategic Priority #1: Resiliency

Resiliency is about making sure our staff, systems, and infrastructure are strong and can return to service quickly in a business interruption. For example, are we prepared for an extended drought, a major earthquake, a pandemic, or other large scale disruption to routine business operations? The focus in this budget is on training, leadership development, and other efforts to support succession planning to strengthen and increase the diversity in the workforce, and on capital spending to build infrastructure reliability and redundancy.

Succession Planning

Ultimately, Metropolitan’s continued success and strength depends on a skilled and experienced workforce. The biennial budget supports our succession planning efforts. We must continue to develop, train, mentor, and support staff at all levels. In 2018, roughly 50 percent of the workforce was eligible to retire. We have a successful history of filling about 90 percent of management and leadership positions and 70 percent of advanced journey positions from within the organization while hiring into the workforce at the entry level. The biennial budget recognizes how important sound succession planning is and accounts for continued training and development of our workforce.

Capital Planned Spending

Capital spending includes necessary projects for replacement and refurbishment of aging infrastructure, strengthening of infrastructure to better withstand earthquakes, improvements in the flexibility, redundancy and integration of systems, and replacement of end-of-life systems. Planned capital spending totals \$500 million over the biennial period. Metropolitan’s ability to maintain a high level of service and readiness to the member agencies underpins our resiliency.

Strategic Priority #2: Sustainability

Sustainability is about charting a long-term course that addresses the challenges before us: climate change, aging infrastructure, contaminants of emerging concern, and affordability of water supplies.

Integrated Water Resources Plan (IRP) Update

Twenty-five years after the first IRP was adopted, the 2020 IRP Update will frame challenging policy discussions for the Board to deliberate. Fundamentally, the 2020 IRP update will define the role of imported water, local resources, and conservation to meet evolving challenges. For the first time, the IRP will contemplate a future where the region’s overall demand for imported water may be decreasing.

Delta Conveyance

Stabilizing the reliability of existing supply from the State Water Project through a Delta conveyance project must remain a strong policy focus. This continued effort is supported by the biennial budget. The focus over the next two years will be supporting the California Department of Water Resources as it seeks permits for a Delta conveyance project; participating in the Delta Conveyance Design and Construction Authority in its role; and continuing to put forward sound scientific research to help inform and improve Delta management decisions. The budget provides \$50 million to fund Metropolitan’s planned contribution for Delta conveyance project planning activities.

Regional Recycled Water Program

The budget includes \$30 million for preparation of a programmatic environmental impact report, which is the next step before the Board will be fully informed and ready to make a decision on if, how, and when to proceed with further investments in this project.

Metropolitan Finances

Determining the right mix of revenues for a sustainable future was discussed at the Board Retreat in October. There is a great deal of history and policy embedded in the design of the current rate structure, which was last looked at in its entirety starting in 1998. The reasons for revising the rate structure then are different than the reasons that may warrant a review of the rate structure today. The incentives built into the current rate structure may or may not be the most appropriate to accomplish the goals that will flow from the IRP Update. Metropolitan will begin a review of the current rate structure in 2020 with a goal of adopting any changes to the rate structure by the end of 2021.

Strategic Priority #3: Innovation

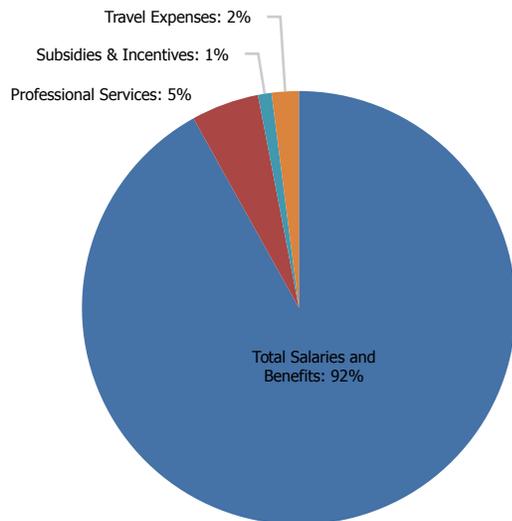
Innovation is about continuing Metropolitan's long tradition of creatively addressing and solving difficult challenges. A recent Water Research Foundation report highlighted Metropolitan as one of the most impactful water utilities in the nation. This is in large part due to our skilled and dedicated staff. As the workforce changes, it is very important that we actively engage new employees by sharing Metropolitan's history of regional cooperation, its diverse, inclusive, and fair culture; discussing the challenges ahead and how we will overcome them; and most importantly, soliciting their innovative ideas about how Metropolitan can continuously improve its operations and business processes.

O&M FINANCIAL SUMMARY

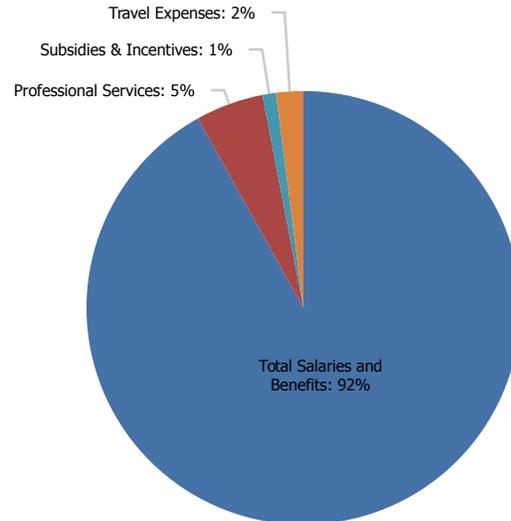
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Total Salaries and Benefits | 4,756,900 | 4,566,900 | 5,050,500 | 483,600 | 5,269,400 | 218,900 |
| <i>Direct Charges to Capital</i> | — | — | — | — | — | — |
| Total Salaries and Benefits | 4,756,900 | 4,566,900 | 5,050,500 | 483,600 | 5,269,400 | 218,900 |
| % Change | | (4.0%) | | 10.6% | | 4.3% |
| Professional Services | 288,900 | 345,000 | 300,000 | (45,000) | 300,000 | — |
| Conferences & Meetings | 14,000 | 25,500 | 26,500 | 1,000 | 26,500 | — |
| Materials & Supplies | 6,600 | 16,500 | 11,000 | (5,500) | 11,000 | — |
| Subsidies & Incentives | 47,400 | 46,800 | 50,700 | 3,900 | 50,700 | — |
| Travel Expenses | 135,400 | 165,100 | 101,200 | (63,900) | 101,200 | — |
| Other Accounts | 20,000 | 58,400 | 10,700 | (47,700) | 10,700 | — |
| Total O&M | 5,269,200 | 5,224,200 | 5,550,600 | 326,400 | 5,769,500 | 218,900 |
| % Change | | (0.9%) | | 6.2% | | 3.9% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE



FY 2021/22 BUDGET BY EXPENDITURE



PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Regular | Total | 13 | 13 | 13 | — | 13 | — |
| | O&M | 13 | 13 | 13 | — | 13 | — |
| | Capital | — | — | — | — | — | — |
| Temporary | Total | — | — | — | — | — | — |
| | O&M | — | — | — | — | — | — |
| | Capital | — | — | — | — | — | — |
| Total Personnel | Total | 13 | 13 | 13 | — | 13 | — |
| | O&M | 13 | 13 | 13 | — | 13 | — |
| | Capital | — | — | — | — | — | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

The Office of the General Manager’s O&M Biennial Budget is \$5.6 million in FY 2020/21 and \$5.8 million in FY 2021/22 or an increase of 6.2% and an increase of 3.9% respectively from the prior budget years. The main factors affecting these changes:

- Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.
- Non-labor expenses are decreasing by about 24% primarily in the areas of travel and professional services.

The following are the significant changes by budget year.

FY 2020/21

Personnel–related issues

Total personnel count remains flat with the FY 2019/20 budget.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget for professional services is decreasing due to shifting two professional services contracts to other appropriate groups.

Other

The budget for travel is decreasing due to trend in less required travel.

FY 2021/22

Personnel–related issues

Total personnel count remains flat with the FY 2020/21 budget.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget for professional services remains flat with the FY 2020/21 budget.

Other

The budget for travel and other O&M remains flat with the FY 2020/21 budget.

This page intentionally left blank.

BAY DELTA INITIATIVES

Bay Delta Initiatives advances Delta improvements and the pursuit of the best scientific research to protect and restore fish, wildlife, and the Delta's ecosystem to ensure water supply reliability.

PROGRAMS

Bay Delta Initiatives (BDI) is responsible for overseeing efforts to secure a reliable water supply from the State Water Project through environmental and water supply improvements in the Sacramento-San Joaquin River Delta.

BDI's core business aims to develop and pursue near- and long-term solutions that will ensure improved water quality and water supply reliability. Efforts include pursuing and providing leadership for Delta improvements, environmental restoration efforts, on-going federal and state Bay-Delta regulatory permitting, studies

and research activities that promote collaborative science, opportunities to improve Delta conditions utilizing Metropolitan's Delta Islands including monitoring Delta levee's performance to ensure long-term levees integrity.

Office of the Bay Delta Initiatives Manager provides overall direction in the management of the group's initiatives and core business, implements the group's strategic priorities, oversees the financial management and budgetary processes, and ensures proper administration of its collaborative science efforts.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, BDI will focus on the following key issues:

Delta Conveyance and EcoRestore

Provide a leadership role in pursuing the state's Delta Improvements, including the new Delta conveyance and California EcoRestore.

Continue to participate in public negotiations for the Delta conveyance cost allocation and collaborate with key stakeholders in negotiating and establishing the appropriate funding approach.

Collaborate with the Department of Water Resources and other agencies in the preparatory work for Delta conveyance environmental planning.

Continue to stay involved in Delta Conveyance Design and Construction Authority exchange of information and ideas for the consideration of project engineering and design approaches to inform the environmental review process.

Work with various agencies to identify, develop, and implement habitat restoration projects that promote the goals of California EcoRestore such as tidal marsh restoration, setback levee, fish passage improvements, and fish rescue facility.

Regulatory, Planning, and Legislative Support

Provide policy and technical support for the processes related to State and Federal Endangered Species Act permitting for the State Water Project.

Provide policy and technical support to negotiate Voluntary Agreements with upstream and export water users to secure regulatory Water Quality Control Plan and water rights permitting by the State Water Resources Control Board.

Participate in Delta Stewardship Council processes including attending meetings, reviewing and providing comments on documents, and collaborating with water contractors and others on relevant issues that help protect the interests of Metropolitan.

Provide technical support for outreach efforts and coordination on related initiatives, and support in the review and analysis of Delta-related legislation.

Science Development

Participate in collaborative science processes through research and studies for the protection of endangered species, management of fish and wildlife species, and the protection and enhancement of ecosystem habitat throughout the Delta for the purpose of securing water supply reliability.

Participate in the Bay-Delta science community by providing input to the Collaborative Science and Adaptive Management Program, including supporting the Collaborative Adaptive Management Team. Provide input in the review of technical work products, workplan development, and discussion of relevant issues that may influence key Delta regulations and policies.

Identify opportunities for collaboration on science related activities including attending and conducting presentations at workshops, symposiums, and conferences to promote efforts that Metropolitan has a vested interest in, and to strengthen the overall Delta science program.

Continue participating in Interagency Ecological Program (IEP) stakeholder meetings to provide updates on on-going studies, develop collaborative partnerships for future studies, and discuss strategies to implement the IEP workplan.

Continue to engage in processes related to independent scientific peer review and present scientific findings to stakeholders. Explore opportunities to publish results of scientific studies supported by Metropolitan in industry recognized publications.

Pursue collaborative partnerships with state and federal water contractors, agencies; associations; and academic institutions to promote scientific research efforts.

Manage updates and improvements related to the web-based scientific application (Bay-Delta Live) to sustain continuous open and transparent sharing of information on the complex and dynamic ecosystem of the Sacramento-San Joaquin Bay Delta for that serve as a tool for meaningful stakeholder discussions and regulatory consideration. Implement scientific research for selected pilot projects using Metropolitan's Delta Islands.

Delta Islands Management

Collaborate with other parties to manage the Delta Islands properties and explore sustainable land management alternatives that are consistent with the state's co-equal goals of a restored Delta and a reliable water supply for California.

Continue the implementation of required Senate Bill 88 Measurement Regulations compliance actions in the Delta Islands including assessment of varying metering technologies, data collection, and further documentation of field conditions, costs, and device measuring accuracy levels.

Pursue grant funding opportunities that will help the long-term water needs of the state and meet Metropolitan board policies of developing subsidence reversal, sustainable agricultural risks, and advancing ecosystem restoration actions.

Emergency Preparedness, Planning and Implementation

Collaborate with state and other agencies in promoting efforts that will reduce seismic risks by ensuring levees integrity.

Continue to support work being implemented by the DWR, the U. S. Army Corps of Engineers, and other parties within the Delta for advancements in emergency preparedness including operational coordination, communication, and assessment in response to potential levee breaches in the Delta region.

Closely monitor the status of California Department of Water Resources' program to acquire piles, rocks, enclosures, and other materials to ensure closure of the deepest levee breaches and for a redundant measure to rock closures in emergency conditions.

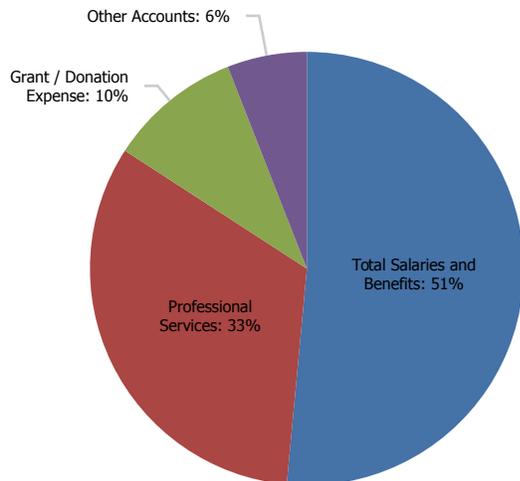
Pursue the Delta Levee Instrumentation and Monitoring Pilot Project to ensure vital assessment of levee performance in the short- and long-term to guide systematic levees safety remediation.

O&M FINANCIAL SUMMARY

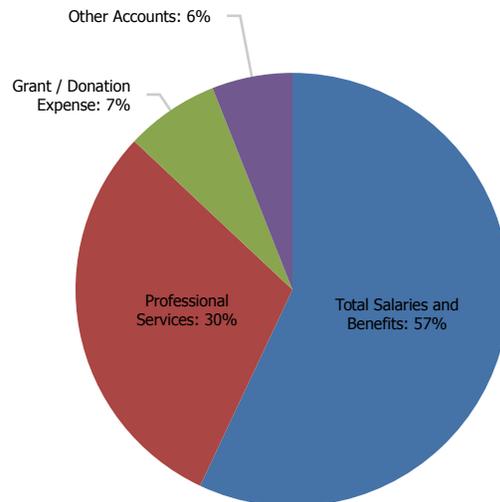
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|--|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Total Salaries and Benefits | 4,781,400 | 4,975,400 | 5,246,100 | 270,700 | 5,542,200 | 296,100 |
| Direct Charges to Capital | — | (93,100) | (28,900) | 64,200 | — | 28,900 |
| Total Salaries and Benefits | 4,781,400 | 4,882,300 | 5,217,200 | 334,900 | 5,542,200 | 325,000 |
| % Change | | 2.1% | | 6.9% | | 6.2% |
| Professional Services | 2,648,200 | 4,525,000 | 3,317,400 | (1,207,600) | 2,883,200 | (434,200) |
| Equipment Expensed | 5,800 | 2,000 | 185,800 | 183,800 | 243,300 | 57,500 |
| Grant / Donation Expense | 246,300 | 525,000 | 986,900 | 461,900 | 714,700 | (272,200) |
| Travel Expenses | 219,600 | 173,300 | 286,000 | 112,700 | 204,300 | (81,700) |
| Other Accounts | 70,100 | 138,600 | 102,700 | (35,900) | 121,600 | 18,900 |
| Total O&M | 7,971,400 | 10,246,200 | 10,096,000 | (150,200) | 9,709,300 | (386,700) |
| % Change | | 28.5% | | (1.5%) | | (3.8%) |
| Operating Equipment | 9,600 | — | — | — | — | — |
| Total O&M and Operating Equipment | 7,981,000 | 10,246,200 | 10,096,000 | (150,200) | 9,709,300 | (386,700) |
| % Change | | 28.4% | | (1.5%) | | (3.8%) |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE



FY 2021/22 BUDGET BY EXPENDITURE



PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Regular | Total | 17 | 17 | 17 | — | 17 | — |
| | O&M | 17 | 17 | 17 | — | 17 | — |
| | Capital | — | 1 | — | — | — | — |
| Temporary | Total | — | 1 | — | (1) | — | — |
| | O&M | — | 1 | — | (1) | — | — |
| | Capital | — | — | — | — | — | — |
| Total Personnel | Total | 17 | 18 | 17 | (1) | 17 | — |
| | O&M | 17 | 18 | 17 | (1) | 17 | — |
| | Capital | — | 1 | — | — | — | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

The Bay Delta Initiatives' O&M Biennial Budget is \$10.1 million in FY 2020/21 and \$9.7 million in FY 2021/22 or a decrease of 1.5% and a decrease of 3.8% respectively from the prior budget years. The main factors affecting these changes:

- Staffing is decreasing by one district temporary position that was supporting emergency preparedness, planning and implementation related to ensuring the integrity of levees in the Delta. This effort is continuing with internal and consultant resources.
- Professional services reflect a decrease due to the deferral of some pilot and science studies and other near-term efforts. Some studies that may be deferred include paludiculture and regenerative pilot studies, science studies on salmon survival and hydrodynamic modeling, and other near-term efforts.
- Grant expense reflects an increase in funding to continue the advancement of efforts on collaborative science through various state, other agencies, and academic institutions.
- Equipment Expensed shows an increase in funding to allow for purchase of equipment not categorized as operating equipment for use in enhanced levee instrumentation and monitoring research in the Delta.

The following are the significant changes by budget year.

FY 2020/21

Personnel-related issues

Total personnel count decreased by one district temporary position that was terminated in 2019.

Capital labor is budgeted as ten percent of one regular FTE for the Delta Islands regulatory compliance project (Senate Bill 88).

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget reflects required funding for activities related to Bay Delta science, general state and federal coordination, regulatory support, Delta Islands operations, regulatory activities, modeling, emergency preparedness including levee instrumentation and monitoring, and Delta conveyance technical assistance in DWR's environmental planning.

Grant Expense

The grant-related expense budget is for Metropolitan's cost share contributions to state, other agencies, and academic institutions that pursue studies that are of interest to Metropolitan.

The increase in grant/donation expenses could also be attributed to a surge in state grant opportunities in recent years that allow agencies to work together and provide cost shares in order to pursue studies that are of interest to all stakeholders. The studies normally run from two to three years.

Travel Expenses

Increase in budget is intended to cover anticipated costs of round trip coach air fares, lodging, meals and various related costs for staff that are required to travel for business. Other additional travel budget is due to increased cost of lodging in Sacramento where staff normally travels. Also included are costs for staff's out of state travel for training and other trips such as those related to Colorado River activities that are supported by some Bay Delta staff.

Equipment Expensed

The budget reflects the purchase of various pieces of survey equipment that were not categorized as operating equipment. Use of this equipment will allow for a better understanding of levee performance in the Delta, and along the Middle River Emergency Freshwater pathway, which will guide systematic levee safety remediation.

Other

The budget is for funding District validated parking for Bay Delta Sacramento staff, subsidies and incentives, materials and supplies, training and conferences, membership and subscriptions, mainly for open-access publication of science-related manuscripts resulting from the various science studies, one vehicle lease, and communication expenses.

FY 2021/22

Personnel-related issues

Total personnel count remains flat from the FY 2020/21 budget.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget reflects a reduction in funding due to the anticipated completion of some of the efforts that are pursued from the previous year.

Grant Expense

The budget reflects a reduction of Metropolitan funding for science cost share agreements due to anticipated completion of some efforts that started the previous year.

Travel Expenses

The budget reflects a decrease in weekly staff travel between Los Angeles and Sacramento due to a potential shift in staff resources.

Equipment Expensed

The budget reflects purchase of remaining survey equipment that is anticipated to be installed during this fiscal year.

Other

The budget reflects an increase in funding for open-access publication of science-related manuscripts resulting from the studies that are anticipated to be completed during the year.

WATER SYSTEM OPERATIONS

Water System Operations (WSO) reliably treats and delivers high-quality water to Metropolitan's member agencies in an efficient, sustainable, and environmentally responsible manner.

PROGRAMS

Water System Operations treats and delivers water from the Colorado River and the State Water Project (SWP) through a raw water conveyance system, five treatment plants, and an extensive treated water distribution network. This flexible system provides reliable deliveries to the member agencies and moves available supplies and storage reserves to meet Metropolitan's mission. Water quality remains paramount and all functions focus on surpassing drinking water standards in a safe and economical way.

WSO accomplishes its mission through the following programs or sections:

Office of the Group Manager provides day-to-day operational management as well as strategic and organizational leadership, directing all initiatives and core business efforts of WSO. The office also provides support functions such as budgeting and administration, and coordinates and engages in regulatory and legislative activities. Additionally, a new unit has been added to provide oversight for the group on capital and operational project delivery, asset management, and member agency service connection requests.

Operations Support Services provides a diverse range of support to Metropolitan's core operational reliability functions and, on a reimbursable basis, to public entities such as DWR and member agencies. The Manufacturing Services unit performs fabrication, machining, coating, valve and pump refurbishment, underwater maintenance, and crane safety and certification. Construction Services unit performs general construction, large equipment transportation, equipment installation, and emergency response. The Power & Equipment Reliability unit provides maintenance services which include: predictive, preventive, and

corrective maintenance analysis for critical equipment, including all treatment plants, pumping plants, hydroelectric power plants, pressure control structures, high voltage equipment, and heating, ventilation, and air conditioning (HVAC) systems. The Fleet Services unit acquires and maintains vehicles, construction equipment, aircraft, and emergency generators.

Water Treatment operates and maintains five water treatment plants with a combined capacity of over 2.3 billion gallons per day. The section oversees treatment processes to ensure high-quality water is reliably produced that complies with drinking water regulations. All five treatment plants are staffed and operated 24 hours a day, seven days a week to meet about half of Metropolitan's annual deliveries. All five of the treatment plants (Jensen, Mills, Skinner, Weymouth and Diemer) have been retrofitted to use ozone as the primary disinfectant.

Water Conveyance and Distribution meets delivery requirements of member agencies by moving water throughout Metropolitan's 5,200 square mile service area and performing a wide range of operations and maintenance activities to ensure system reliability. This work encompasses the Colorado River Aqueduct (CRA) system and its five pumping plants as well as the distribution system of about 830 miles of pipelines, approximately 350 service connections to member agencies, 16 hydroelectric plants, and 9 storage and regulatory reservoirs that help Metropolitan meet peak flow periods and provide dry year and emergency supply reliability. These functions are separated into two sections: one for the desert region, and one for the eastern and western regions of the service area.

Water Quality ensures that Metropolitan provides safe and aesthetically pleasing water through the following activities: conducting chemical and biological analyses; optimizing existing treatment processes; testing new technologies to assure compliance with current and future regulations; and providing technical expertise, laboratory services, and troubleshooting of water quality issues for Metropolitan and its member agencies. Water Quality also works to preserve and improve source water quality through rigorous watershed surveys and advocate for measures to reduce the risk of point and non-point source pollution. The section is also advancing water reuse opportunities through operations and testing at the Regional Recycled Water Advanced Purification Center.

Water Operations and Planning plans and implements the movement and use of water resources. These plans incorporate infrastructure and supply limitations, agency demands, changing water quality requirements, and storage program economics. Operational scenarios that encompass a broad range of potential supplies and demands are developed and refined on a weekly basis throughout the year. This process prepares WSO for a wide variety of possible outcomes as the year develops while maintaining reliable deliveries and balancing management of water storage reserves at reasonable cost.

In addition, the section programs and maintains Metropolitan's automated control system, known as the Supervisory Control and Data Acquisition (SCADA) system.

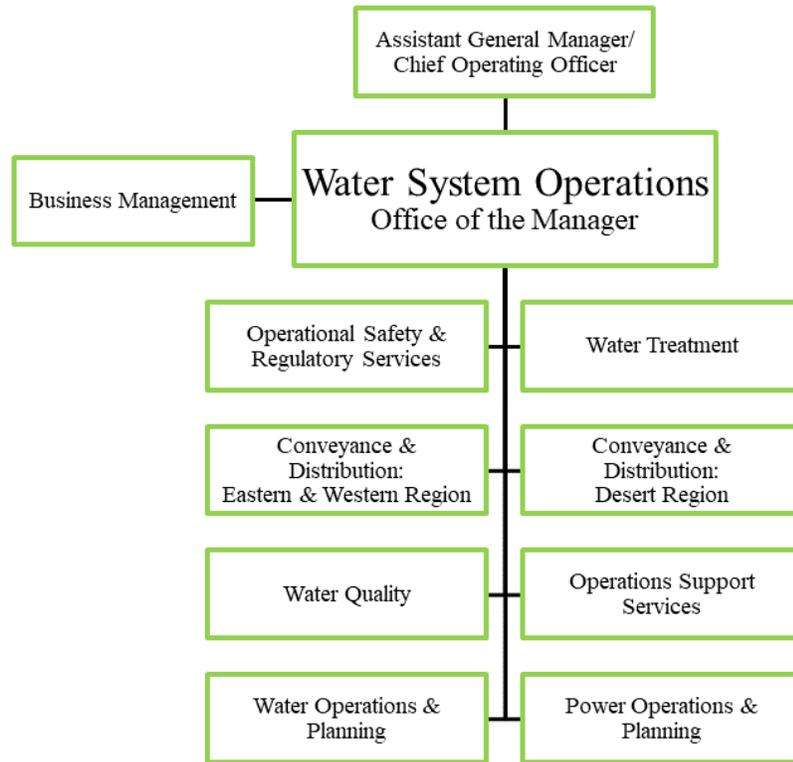
Operational Safety and Regulatory Services is responsible for ensuring a safe working environment for employees through programs and training, ensuring business operations are

conducted in an environmentally responsible way, and complying with all regulatory and occupational health and safety rules and requirements. The section integrates environmental, health and safety practices into Metropolitan's operations and culture with the goal of achieving a safe work place and eliminating regulatory incidents.

In addition, the section manages technical skills training for maintenance craft employees and sponsors an accredited apprenticeship program which is a cornerstone of WSO's proactive succession planning efforts. This is done by training industrial mechanics and electricians over a four-year period of classroom and hands-on instruction.

Power Operations and Planning plans, acquires and accounts for the energy required to operate the CRA. This activity includes energy transactions with electric utilities and marketers. The section also negotiates and manages the contracts and energy accounting of renewable energy credits and greenhouse gas allowances for 16 small hydroelectric power plants and the CRA.

In addition, the section is responsible for most wholesale energy activities including evaluation of proposed energy-related regulations and legislation; analysis of state and regional transmission plans and impacts to the CRA transmission system; and reporting on compliance with regional and national electric reliability standards. Finally, the section works closely with energy staff at DWR on energy and transmission issues for the SWP.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, WSO will focus on the following key issues:

System Reliability

Manage and maintain the water system to ensure operational reliability for all reasonably expected demands.

Develop and distribute the annual operating plan and manage water storage to provide the greatest delivery flexibility and cost effectiveness. Build on strategies such as employing operational flexibility to mitigate future drought condition impacts on water availability.

Plan, schedule, and execute the Annual Shutdown Plan to ensure reliable operation of the water delivery system, including a strategy to manage longer shutdowns to support the refurbishment of prestressed concrete cylinder pipelines.

Maintain eight-pump flow readiness on the CRA and manage storage accounts to capture all available Colorado River supplies in concert with water supplies from other sources.

With member agency and regional partners, develop new water supplies to supplement the core SWP and Colorado River supplies including groundwater recovery, ocean desalination, and potable reuse.

Support the Regional Recycled Water Program by achieving regulatory acceptance for the process design. Conduct demonstration testing and perform optimization studies.

Support the Colorado River Aqueduct Main Pump Reliability Program, including detailed inspections of pumps, components and support systems.

Participate with the California Department of Water Resources (DWR) on value-engineering efforts to ensure cost-effective rehabilitation of SWP conveyance, pumping, and generation facilities.

Fully utilize the manufacturing shops in La Verne to maintain Metropolitan's infrastructure reliability and support projects for DWR and the member agencies.

Partner with Engineering Services and Information Technology groups to develop and implement a comprehensive Asset Management Plan.

Partner with other groups to develop and implement an Energy Sustainability Plan that will define strategies to increase operational flexibility, and reduce energy costs and greenhouse gas emissions.

Continue the multi-year upgrade of the SCADA system to maintain and improve the ability to remotely operate the conveyance, distribution, and treatment systems.

Conduct emergency response exercises involving internal operational groups, member agencies, and other emergency response agencies.

Workforce Development & Succession Planning

Conduct an annual Management Academy program to improve internal recruitment pool for entry-level supervisors.

Recruit and begin training a new apprentice class each year for the mechanical and electrical trades.

Provide continuing education classes for licensed water treatment and distribution operators that are tailored to Metropolitan's procedures and facilities.

Water Quality, Environmental Protection, and Safety

Meet or surpass all drinking water standards and ensure delivery of aesthetically pleasing water.

Engage in the regulatory process to ensure full consideration of technical and economic feasibility for drinking water and environmental regulations.

Engage watershed stakeholders and regulators to ensure effective control of source water contaminants such as uranium, perchlorate, chromium, nutrients, and cyanotoxins.

Provide safety and regulatory services to ensure safe work practices and adhere to environmental and workplace health and safety regulations.

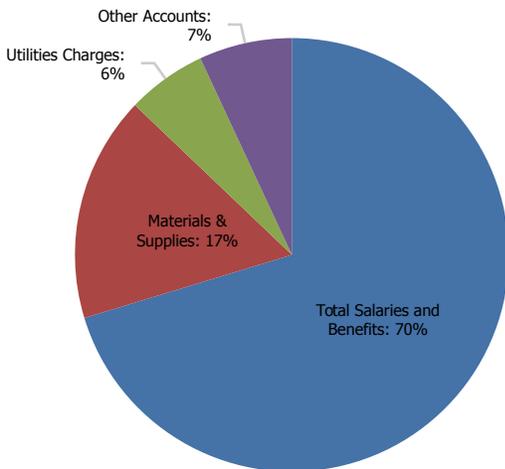
Increase monitoring of quagga mussels in the west and east branches of the State Water Project and prepare quagga mussel control plans.

O&M FINANCIAL SUMMARY

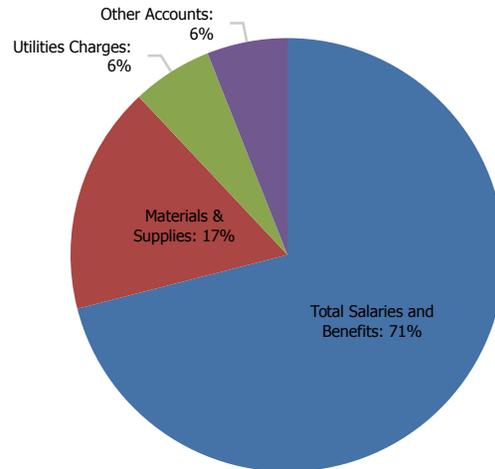
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|--|--------------------|--------------------|--------------------|------------------------|--------------------|------------------------|
| Total Salaries and Benefits | 175,976,400 | 182,670,300 | 195,967,300 | 13,297,000 | 206,886,800 | 10,919,500 |
| Direct Charges to Capital | (10,410,900) | (7,650,200) | (8,452,300) | (802,100) | (8,951,300) | (499,000) |
| Total Salaries and Benefits | 165,565,500 | 175,020,100 | 187,515,000 | 12,494,900 | 197,935,500 | 10,420,500 |
| % Change | | 5.7% | | 7.1% | | 5.6% |
| Professional Services | 710,200 | 1,493,200 | 1,431,700 | (61,500) | 2,056,500 | 624,800 |
| Materials & Supplies | 40,392,500 | 38,288,000 | 44,668,800 | 6,380,800 | 46,279,600 | 1,610,800 |
| Outside Services - Non Professional / Mainte | 6,872,200 | 6,736,500 | 7,141,500 | 405,000 | 7,187,600 | 46,100 |
| Utilities Charges | 13,538,300 | 14,868,200 | 16,335,400 | 1,467,200 | 16,650,500 | 315,100 |
| Other Accounts | 10,903,600 | 8,598,700 | 8,694,100 | 95,400 | 8,627,000 | (67,100) |
| Total O&M | 237,982,300 | 245,004,700 | 265,786,400 | 20,781,800 | 278,736,700 | 12,950,200 |
| % Change | | 3.0% | | 8.5% | | 4.9% |
| Operating Equipment | 4,618,800 | 6,000,000 | 5,997,700 | (2,300) | 6,000,000 | 2,300 |
| Total O&M and Operating Equipment | 242,601,100 | 251,004,700 | 271,784,100 | 20,779,500 | 284,736,700 | 12,952,600 |
| % Change | | 3.5% | | 8.3% | | 4.8% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE

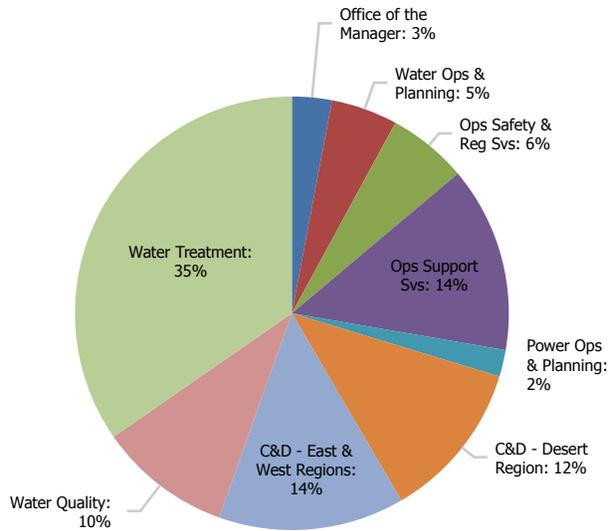


FY 2021/22 Budget by Expenditure

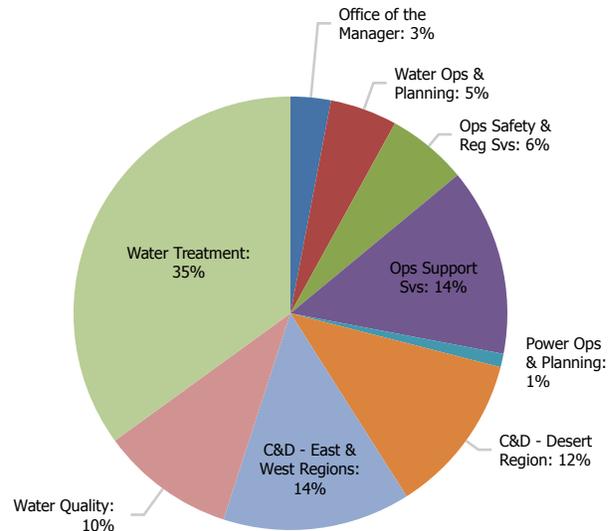


O&M BUDGET BY SECTION

FY 2020/21 BUDGET BY SECTION



FY 2021/22 BUDGET BY SECTION



| | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 | Personnel Budget | | |
|--|--------------------|--------------------|---------------------|--------------------|---------------------|------------------|------------|------------|
| | | | | | | 19/20 | 20/21 | 21/22 |
| Office of the Manager | 5,893,000 | 7,211,800 | 1,318,900 | 7,505,900 | 294,100 | 52 | 21 | 21 |
| Water Operations and Planning | 12,133,400 | 12,459,100 | 325,700 | 13,003,600 | 544,500 | 42 | 40 | 40 |
| Operational Safety and Regulatory Services | 14,827,300 | 15,669,900 | 842,600 | 16,414,100 | 744,200 | 55 | 51 | 51 |
| Operations Support Services | 35,900,000 | 37,473,900 | 1,574,000 | 39,100,800 | 1,626,900 | 120 | 150 | 150 |
| Power Operations and Planning | 3,397,800 | 4,037,500 | 639,700 | 4,107,800 | 70,300 | 12 | 12 | 12 |
| C&D Section - Desert Region | 28,093,800 | 31,160,200 | 3,066,400 | 32,961,200 | 1,801,100 | — | 134 | 134 |
| C&D Section - Eastern & Western Regions | 36,392,400 | 37,371,500 | 979,100 | 39,145,100 | 1,773,500 | 264 | 133 | 133 |
| Water Quality | 25,430,900 | 27,525,600 | 2,094,700 | 29,256,600 | 1,731,000 | 96 | 104 | 102 |
| Water Treatment | 82,936,200 | 92,877,000 | 9,940,800 | 97,241,600 | 4,364,600 | 277 | 267 | 267 |
| Total O&M | 245,004,700 | 265,786,400 | 20,781,800 | 278,736,700 | 12,950,200 | 918 | 912 | 910 |

Totals may not foot due to rounding.

PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Regular | Total | 863 | 940 | 940 | — | 940 | — |
| | O&M | 817 | 898 | 894 | (3) | 894 | — |
| | Capital | 46 | 43 | 46 | 3 | 46 | — |
| Temporary | Total | 24 | 21 | 18 | (3) | 16 | (2) |
| | O&M | 23 | 21 | 18 | (3) | 16 | (2) |
| | Capital | 1 | — | — | — | — | — |
| Total Personnel | Total | 886 | 961 | 958 | (4) | 956 | (2) |
| | O&M | 839 | 918 | 912 | (7) | 910 | (2) |
| | Capital | 47 | 43 | 46 | 3 | 46 | — |

Totals may not foot due to rounding

BUDGET HIGHLIGHTS

WSO's O&M and Operating Equipment Biennial Budget is \$271.8 million in FY 2020/21 and \$284.7 million in FY 2021/22 or an increase of 8.3% and an increase of 4.8%, respectively from the prior year budgets. The main factors affecting these changes:

- A combination of increased treated water flows, significant increases in chemical commodity prices, and higher chemical dosages needed to treat State Water Project supplies raised the expected chemical costs for water treatment.
- An increase in materials and supplies needed for the repair and maintenance of aging equipment, as well as building and construction materials needed for patrol road maintenance associated with annual storm damage.
- An increase in hazardous waste disposal costs expensed to O&M as a result of increased vendor fees.
- An increase in chemical costs and contract laboratory services to support the Regional Recycled Water Program.
- These increases are offset in part by a reduction in Laboratory Supplies.

The following are the significant changes by budget year.

FY 2020/21

Personnel-Related issues

The number of regular positions remained flat from the FY 2019/20 budget, while temporary labor needs are anticipated to decrease due to the filling of vacant regular positions. Organizational changes were made to better support business objectives, including addressing aging infrastructure and major rehabilitation programs, increased regulatory and compliance requirements, new strategic initiatives as well as supporting WSO's Apprenticeship program.

A unit has been added to oversee capital and operational project delivery for the group asset management initiatives and the service connection program. The Conveyance & Distribution Section has been restructured to provide for a dedicated section manager over Desert facilities and staff.

Organizational changes were made in the Water Quality Section to prepare for new regulations addressing laboratory standards, and for development of potable reuse initiatives through

operations and testing at the Regional Recycled Water Advanced Purification Center.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Materials and Supplies

The budget reflects inflationary pressure anticipated on chemicals and other materials and supplies.

Non-Professional Services

The budget reflects inflationary increases in labor and fuel costs for services provided in this category such as janitorial, pest control, and inspection services.

In addition, costs for compliance-related contract services increased for environmental and safety equipment, as well as energy regulatory compliance activities for power operations.

Utilities Charges

The budget reflects an increase in waste disposal costs from facility R&R projects and an increase in expected electrical rates.

Other

A switch to high capacity circuits resulted in a reduction in Communications Expenses by reducing the amount and types of communications lines needed for both data and phone traffic.

FY 2021/22

Personnel-Related issues

Regular personnel count for both O&M and capital work remains flat from the FY 2020/21 budget, while temporary labor needs continue to decrease due to the anticipated filling of vacant regular positions.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget reflects an increase in contract laboratory services for demonstration testing and monitoring at the Regional Recycled Water Advanced Purification Center.

In addition, consultant services are required to support the Asset Management program.

Materials & Supplies

The budget reflects inflationary pressures anticipated on chemicals, fuel pricing and other materials and supplies.

Non-Professional Services

The budget reflects inflationary increases in labor and fuel costs for services provided in this category such as janitorial, pest control, and inspection services.

In addition, costs for compliance-related contract services increased for environmental and safety equipment.

Utilities Charges

The budget reflects an increase in waste disposal costs from facility R&R projects and an increase in expected electrical rates.

Operating Equipment – FY 2020/21 and FY 2021/22

The operating equipment budget is maintained to replace aging fleet and heavy equipment.

WATER RESOURCE MANAGEMENT

Water Resource Management (WRM) plans, secures, and manages water resources to provide its member agencies with a reliable, cost-effective, and drought and climate-resilient water supply.

PROGRAMS

Water Resource Management manages imported water supplies; advances water-use efficiency; provides supply and demand forecasts foundational for long-term resource planning; and develops and implements timely resource programs and projects.

In addition, Water Resource Management assists member agencies in optimizing local resources to benefit the entire Metropolitan service area, and ensures Metropolitan receives a fair return on contractual investments in local and imported resources.

Water Resource Management accomplishes its mission through the following programs or sections:

Office of the Manager directs the group's efforts in planning, securing, and managing Metropolitan's water resources; monitors and tracks the group's business plan, financial and budgetary initiatives; and provides administrative and business process support.

Resource Planning & Development is responsible for providing an integrated water supply and demand forecast that will meet the needs of member agencies and reflect their

long-range planning efforts for local supplies, which sets the foundation for Metropolitan's resource mix and local supplies needed to meet demands. This section also supports the development of resource programs, projects, and infrastructure to meet projected resource targets; administers the planning process; defines strategies for meeting service area water needs, including the Integrated Water Resources Plan (IRP) and Water Surplus and Drought Management (WSDM) plan; and develops resource options, such as groundwater conjunctive use, regional recycling, stormwater and seawater desalination; as well as alternatives for short-range planning and implementation through joint action with Water System Operations.

Resource Implementation develops and administers water resource programs and contracts, and pursues application of new technologies and innovations. These activities focus on the Colorado River, State Water Project, water transfers, water recycling, groundwater recovery, and water conservation for the region. The Resource Implementation Section also monitors and responds to regulatory, legislative, and operational activities that may influence Metropolitan's water rights and benefits related to the quality, reliability and cost of water.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, WRM will focus on the following key issues:

Colorado River

Complete the Colorado River Sustainability Study in preparation for negotiations of Colorado River system operations.

Protect Colorado River resources, Metropolitan's Colorado River rights, and optimize the use of available Colorado River water.

Support participation in the Colorado River Salinity Control Forum and facilitate salinity management projects and other actions that protect and improve source water quality.

Partner with other Colorado River water delivery contractors to develop new Metropolitan supplies, including interstate and international water supply programs.

Administer Imperial Irrigation District (IID), Palo Verde Irrigation District (PVID), and proposed Bard Irrigation District agricultural conservation programs.

Work with representatives of the International Boundary and Water Commission and United States Bureau of Reclamation (USBR) to continue implementation of Minute 323 and coordinate emergency deliveries for Tijuana.

Administer contracts with Colorado River entities to make full use of Metropolitan's supplies developed from Colorado River resources. Manage intentionally created surplus supplies to ensure maximum benefit to Metropolitan.

Develop strategies and tools for managing agricultural land holdings in the Palo Verde Valley.

Groundwater Storage Program

Continue management of nine approved conjunctive use programs to store water for dry-year yield.

Continue facilitation of dialogue among agencies in groundwater management, recycled water production, and stormwater and flood management to enhance groundwater basin recharge.

Legislative Review

Continue to review and provide comments and inform member agencies on proposed state and federal legislation on water resources issues related to Metropolitan's mission and WRM functions.

Regional Resources and Water Conservation

Implement Long-Term Water Conservation Plan and new Local Resource Plan (LRP) initiatives to meet state mandated urban water use reduction targets and increase local resource and production. Pursue grant funding to supplement implementation of regional water conservation program initiatives.

Participate in local, state, and national activities leading to expanded use of recycled water and increased water-use efficiency.

Administer agreements that provide incentives for conservation, recycled water, recovered groundwater production, and support development of local resource development projects.

Conduct and fund research to advance local supply development and conservation program effectiveness.

Administer the Future Supply Actions Funding program to remove barriers to local supply production.

Implement stormwater pilot programs with the member agencies to evaluate Metropolitan's participation in stormwater projects.

Develop programs to improve water conservation in disadvantaged communities.

Seawater Desalination

Continue to support member agency development efforts and actively participate in CalDesal regulatory and legislative initiatives.

State Water Project

Coordinate implementation of SWP contract amendments including the SWP contract extension, water management amendment and proposed Delta conveyance facility amendment. These

contract amendments will ensure a long-term supply, and effective water management tools to manage the supply and reliability into the future.

Ensure accurate billings and influence sound financial decisions by DWR, including effective DWR energy management practices with regard to renewable energy, emissions reductions, transmission strategies, and energy acquisitions.

Continue to identify and resolve disputed charges related to annual SWP billings.

Protect SWP water, power, and financial positions under the Oroville Federal Energy Regulatory Commission (FERC) relicensing process as well as associated litigation and upcoming FERC relicensing and several DWR facilities in Southern California.

Coordinate and influence decisions for major facility rehabilitations and SWP capital projects to ensure cost-effective and reliable water supply, energy generation, and use.

Promote water quality monitoring and forecasting activities through the Municipal Water Quality Investigations program and raise awareness of potential water quality impacts from operational decisions.

Water Supply and System Planning

Complete the 2020 IRP and Urban Water Management Plan reflecting Metropolitan's long-term water resources strategy and complete the annual reports on Metropolitan's achievements in conservation, recycling, and groundwater recharge.

Complete the annual forecast of Metropolitan demands to support revenue requirements and budget process.

Use the 2020 IRP forecasts to develop a comprehensive analysis of Metropolitan's distribution system. Identify potential spatial constraints and system improvements to reliably deliver water to member agencies during peak demands, drought, and emergency conditions.

Update emergency storage objective for in-basin protection from earthquake or other outage using revised demand forecast from IRP.

Continue to pursue development of the full-scale Regional Recycled Water Program to increase water reuse and enhance opportunities for groundwater recharge within Metropolitan’s service area.

Upgrade and enhance planning tools, such as computer models for demand forecasting, resource program evaluation, and distribution system.

Participate in state water/energy nexus processes and data access initiatives.

Continue to collaborate with various agencies and stakeholders in statewide and regional water resource planning efforts, such as the California Water Plan Updates and the Integrated Regional Water Management Plans.

Continue work with the Water Utility Climate Alliance to perform case studies on climate data applications to water resources planning.

Water Transfers, Exchanges, and Storage Programs

Continue to manage existing water transfer, exchange, and storage programs along the California Aqueduct and Colorado River Aqueduct.

Continue to evaluate the need for additional reliability by either developing new programs or modifying existing programs. Pursue additional water transfers, exchanges, and storage programs as needed.

Work with other State Water Contractors on a long-term water transfer permitting process.

Workforce Development & Succession Planning

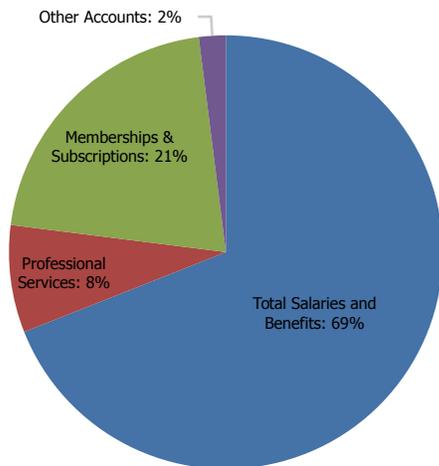
Continue to develop staff expertise in critical areas to prepare for employee retirements or departures.

O&M FINANCIAL SUMMARY

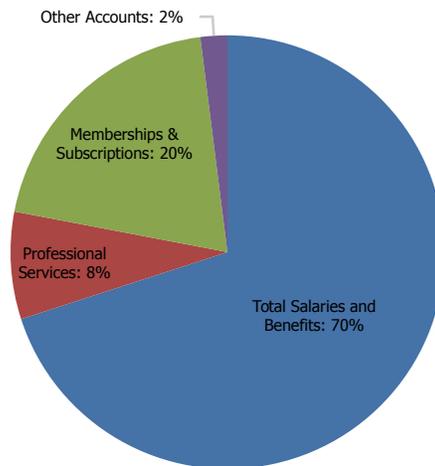
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Total Salaries and Benefits | 14,578,100 | 16,651,600 | 16,871,200 | 219,600 | 17,823,700 | 952,500 |
| Direct Charges to Capital | (8,000) | — | — | — | — | — |
| Total Salaries and Benefits | 14,570,100 | 16,651,600 | 16,871,200 | 219,600 | 17,823,700 | 952,500 |
| % Change | | 14.3% | | 1.3% | | 5.6% |
| Professional Services | 1,555,300 | 1,986,500 | 2,003,500 | 17,000 | 2,012,500 | 9,000 |
| Memberships & Subscriptions | 4,247,700 | 5,844,900 | 5,042,600 | (802,300) | 5,069,600 | 27,000 |
| Other Accounts | 552,600 | 583,000 | 454,000 | (129,000) | 440,400 | (13,600) |
| Total O&M | 20,925,700 | 25,066,000 | 24,371,300 | (694,700) | 25,346,200 | 974,900 |
| % Change | | 19.8% | | (2.8%) | | 4.0% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE

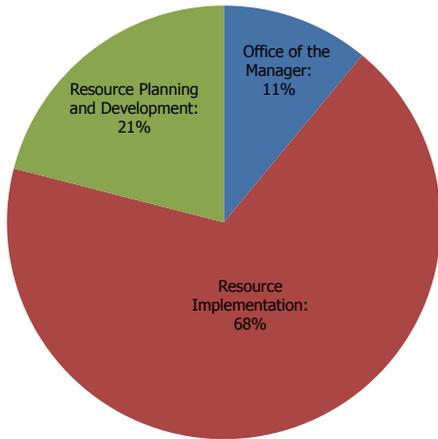


FY 2021/22 BUDGET BY EXPENDITURE

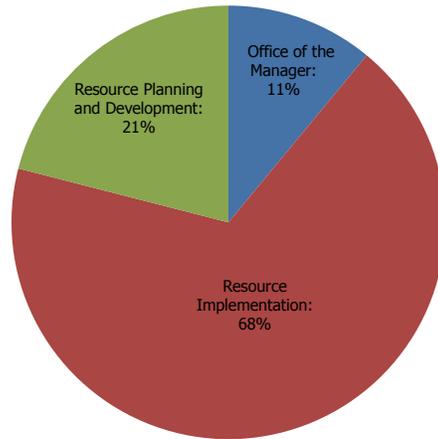


O&M BUDGET BY SECTION

FY 2020/21 BUDGET BY SECTION



FY 2021/22 BUDGET BY SECTION



| | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 | Personnel Budget | | |
|-----------------------------------|-------------------|-------------------|---------------------|-------------------|---------------------|------------------|-----------|-----------|
| | | | | | | 19/20 | 20/21 | 21/22 |
| Office of the Manager | 2,978,700 | 2,720,700 | (258,000) | 2,818,400 | 97,700 | 13 | 12 | 12 |
| Resource Implementation | 17,530,300 | 16,562,500 | (967,800) | 17,202,600 | 640,100 | 40 | 41 | 41 |
| Resource Planning and Development | 4,556,900 | 5,088,100 | 531,200 | 5,325,200 | 237,100 | 16 | 18 | 18 |
| Total O&M | 25,066,000 | 24,371,300 | (694,700) | 25,346,200 | 974,900 | 69 | 70 | 70 |

Note - Totals may not foot due to rounding.

PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|----------------|----------------|----------------|---------------------|----------------|---------------------|
| Regular | Total | 59 | 68 | 68 | — | 68 | — |
| | O&M | 59 | 68 | 68 | — | 68 | — |
| | Capital | — | — | — | — | — | — |
| Temporary | Total | 2 | 1 | 2 | 1 | 2 | (1) |
| | O&M | 2 | 1 | 2 | 1 | 2 | (1) |
| | Capital | — | — | — | — | — | — |
| Total Personnel | Total | 61 | 69 | 70 | 1 | 70 | (1) |
| | O&M | 61 | 69 | 70 | 1 | 70 | (1) |
| | Capital | — | — | — | — | — | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

WRM's Biennial Budget is \$24.4 million in FY 2020/21 and \$25.3 million in FY 2021/22 or a decrease of 2.8% and an increase of 4.0%, respectively from the prior budget years. WRM's budget is increasing by only 1.1% over the biennium. The main factors affecting these changes:

- The increase in salaries and benefits are being offset to a large degree by a reduction in memberships and subscriptions due to the dissolution of two water committees, and the shift of the Innovation Conservation Program costs to the non-departmental Demand Management budget.
- The Conservation Program, Local Resources Program, Future Supply Actions and Supply Programs budgets are captured in the non-departmental section of the budget. WRM is responsible for the management, development and administration of these programs.

The following are the significant changes by budget year:

FY 2020/21

Personnel–Related Issues

Personnel count remains flat. However, due to ongoing succession planning, eleven positions have been reclassified: two management positions reclassified to non-management intermediate levels, and nine additional positions recruited at a lower level. In addition, one district temporary position is included for transforming paper records to digital libraries and improving records management.

Salaries and benefits reflect negotiated labor increases and merit increases for qualified employees. These increases are offset by vacancies filled at lower level job classifications.

Professional Services

The budget reflects an increase in support for the IRP, including forecasts of residential water use, legislation impacts on conservation, and incorporating climate change. The budget also reflects an increase for updating the Colorado River Basin Demand and Hydrology for the Colorado River Sustainability Plan analysis.

Memberships and Subscriptions

The budget is decreasing as the result of the dissolution of the State Water Project Contractors Authority (SWPCA) and State & Federal Water Contractors Authority (SWFCA) organizations. Projects and funding will be

managed within the State Water Contractors association. The budget includes a new membership for the California Water Data Consortium.

Other

The budget includes an increase in advertising and printing for the Urban Water Management Plan, as well as expensed equipment for new employees. These increases are offset by the costs related to the Innovation Conservation Program being moved to the Demand Management budget (non-departmental).

FY 2021/22

Personnel–Related Issues

Total temporary personnel count decreases from the FY 2020/21 budget, due to one District Temporary position that will be utilized for only a portion of FY 2021/22 in order to complete the digital records project.

Salaries and benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

Budget reflects slight increase for continued IRP related activities.

Memberships and Subscriptions

The budget reflects an inflationary increase for Municipal Water Quality Investigations and Six Agency dues. The State Water Contractors membership dues will stay flat.

Other

The budget reflects an increase in materials and supplies for software, as well as training and seminars for new climate related conferences. These increases are offset by a decrease in printing costs related to the Urban Water Management Plan.

ENGINEERING SERVICES

Engineering Services provides innovative solutions that exceed our partner's expectations as the public-sector's leader for water engineering.

PROGRAMS

Engineering Services performs project management, design, construction management, infrastructure condition assessments, facility planning, manages Metropolitan's Capital Investment Plan (CIP), and provides on-going operations and maintenance support to other stakeholders and partners within the organization.

Engineering Services accomplishes its mission through the following programs or services to our strategic partners:

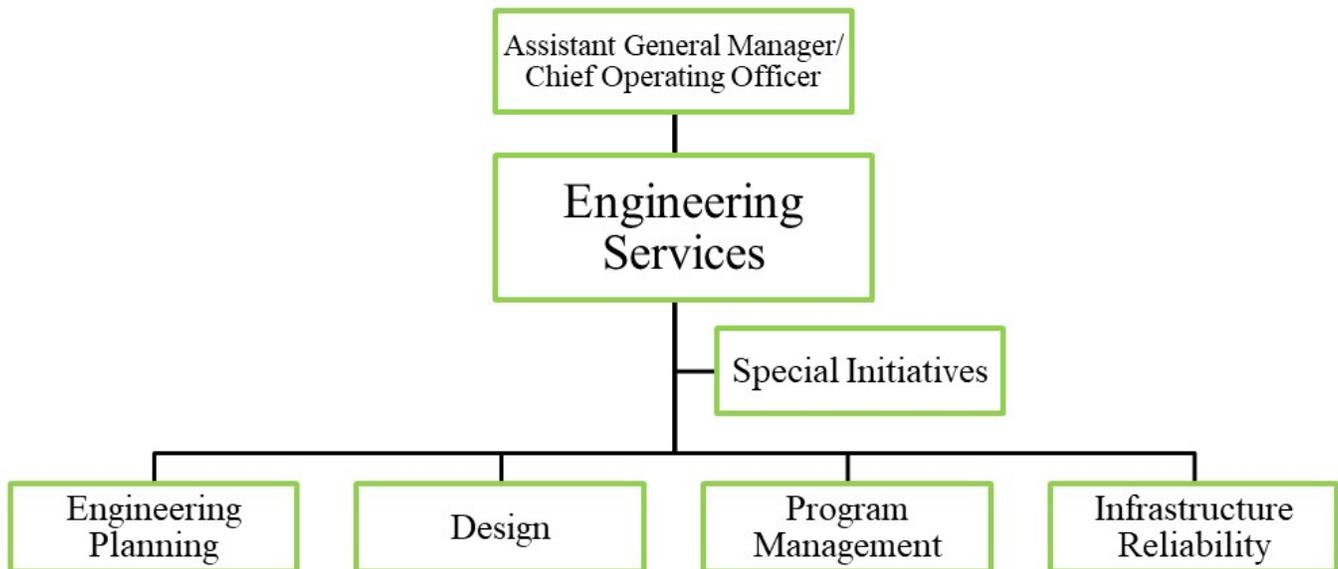
Office of the Group Manager oversees the management of the Engineering Services group by providing strategic leadership on engineering initiatives and core business efforts, to ensure the continued reliability and quality of water deliveries. The office also provides technical support for special initiatives including the Delta conveyance, Dam Safety, and Metropolitan's Regional Recycled Water Program.

Engineering Planning is responsible for the functions of facility planning, hydraulic analysis, hydraulic modeling, protection of Metropolitan's substructures, construction contract administration, technical control and oversight of engineering standards, capital project support, business process management and budgeting, and management of Metropolitan's CIP.

Design is responsible for the preparation of technical assessments, conceptual and preliminary designs for new facilities and for rehabilitation of existing facilities, final design drawings and specifications for construction, and technical support during the construction, commissioning, and operation of facilities.

Program Management is responsible for the overall delivery of both capital and O&M projects for treatment plants, distribution, conveyance and storage systems; and serves as Metropolitan's Owner's Engineer.

Infrastructure Reliability is responsible for the management of construction contracts, field inspection, and factory fabrication inspection; and surveying and mapping, right-of-way, and corrosion and materials engineering.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, Engineering Services will focus on the following key issues:

Delta Conveyance

Support the on-going activities of the Design and Construction Authority Joint Powers Authority by providing as-needed project management and technical support for the initial work activities related to the Delta conveyance facilities.

Special Initiatives

Provide program management and leadership for development of Metropolitan’s Regional Recycled Water Program in the form of program planning, budgeting and collaboration with internal and external program participants and stakeholders, and provide technical support to the operations of the advanced water treatment demonstration plant.

Continue to support opportunities to collaborate with other agencies to enhance local water supplies.

Dam Safety

Ensure the safe and reliable operation of Metropolitan’s dams and reservoirs through periodic dam inspections and extensive surveillance, comprehensive evaluations of existing dams and appurtenant structures using current design standards, thorough review and inspection of major repair work, and careful planning and coordination of emergency action plans with local agencies. New dam safety initiatives include upgrading instrumentation and use of technology to obtain and present instrumentation results in real-time.

Infrastructure Reliability

Manage and complete board–authorized projects within the CIP to ensure the reliable delivery of water to Metropolitan’s member agencies.

Provide engineering and technical services to support the operation and maintenance of Metropolitan’s water conveyance, delivery, treatment, and support facilities.

Protect public safety, minimize future costs of infrastructure maintenance and repairs, and avoid unplanned outages by monitoring Metropolitan’s facilities and right-of-way, performing essential technical assessments, and implementing modern asset management methods.

CIP Management

Execute capital projects to enhance seismic resiliency of key Metropolitan facilities, rehabilitate aging infrastructure, and maintain system flexibility. High priority programs that will continue during the biennium include the PCCP Rehabilitation and CRA Rehabilitation.

Partner with Water System Operations and other stakeholders to prioritize capital projects to address Metropolitan’s short–term needs and long–term objectives, and optimize utilization of internal and external resources.

Continue to identify and implement improvements in project delivery.

Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation

Continue pipe procurement, valve procurement, and construction to rehabilitate the remaining PCCP portions of the Second Lower Feeder. Continue preliminary design to rehabilitate the Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, and Sepulveda Feeder.

CRA Rehabilitation

Continue investigations to rehabilitate the CRA main pumps and construction to rehabilitate pump house cranes and discharge line isolation joints. Complete design to upgrade potable water, industrial water and wastewater lines and replace transformers at each of the five CRA pumping plants.

Employee Development

Lead workforce development and succession planning activities to optimally develop and maintain technical expertise and skills needed in the future to ensure infrastructure reliability, meet regulations, respond to emergencies, and support Metropolitan initiatives.

Partnership and Collaboration

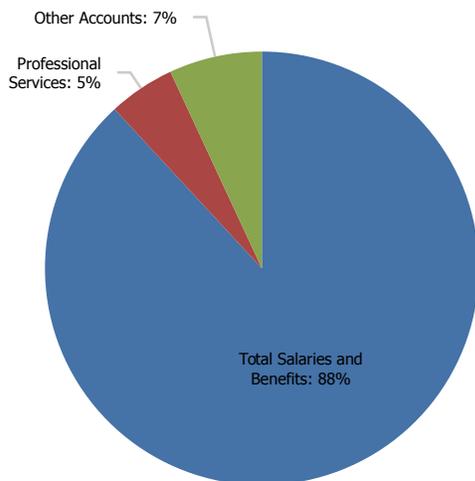
Lead communication and new initiatives to enhance partnership and collaboration between ESG and WSO, and further improve the quality and timeliness of deliverables.

O&M FINANCIAL SUMMARY

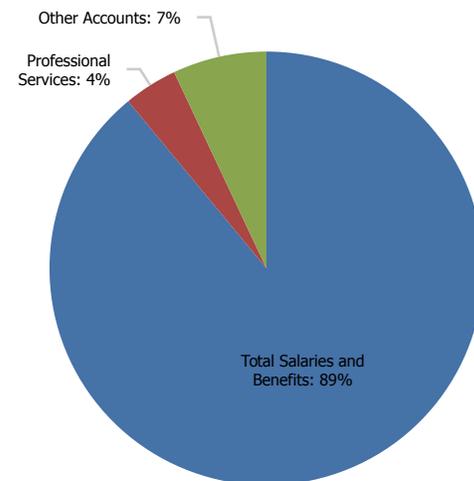
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|--|---------------------|---------------------|---------------------|------------------------|---------------------|------------------------|
| Total Salaries and Benefits | 70,900,300 | 81,444,400 | 84,147,100 | 2,702,700 | 89,110,600 | 4,963,500 |
| <i>Direct Charges to Capital</i> | <i>(42,497,700)</i> | <i>(51,301,500)</i> | <i>(50,070,500)</i> | <i>1,231,000</i> | <i>(53,066,600)</i> | <i>(2,996,100)</i> |
| Total Salaries and Benefits | 28,402,600 | 30,142,900 | 34,076,600 | 3,933,700 | 36,044,000 | 1,967,400 |
| % Change | | 6.1% | | 13.1% | | 5.8% |
| Professional Services | 1,368,700 | 1,552,800 | 1,773,500 | 220,700 | 1,749,000 | (24,500) |
| Materials & Supplies | 574,200 | 734,200 | 741,700 | 7,500 | 754,700 | 13,000 |
| Memberships & Subscriptions | 224,300 | 237,000 | 237,000 | — | 237,500 | 500 |
| Taxes & Permits | 522,200 | 484,000 | 870,000 | 386,000 | 957,000 | 87,000 |
| Travel Expenses | 138,100 | 172,100 | 172,100 | — | 172,100 | — |
| Other Accounts | 681,300 | 542,000 | 511,600 | (30,400) | 511,300 | (300) |
| Total O&M | 31,911,400 | 33,865,000 | 38,382,500 | 4,517,500 | 40,425,600 | 2,043,100 |
| % Change | | 6.1% | | 13.3% | | 5.3% |
| Operating Equipment | 837,200 | 174,800 | 720,800 | 546,000 | 569,800 | (151,000) |
| Total O&M and Operating Equipment | 32,748,600 | 34,039,800 | 39,103,300 | 5,063,500 | 40,995,400 | 1,892,100 |
| % Change | | 3.9% | | 14.9% | | 4.8% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE

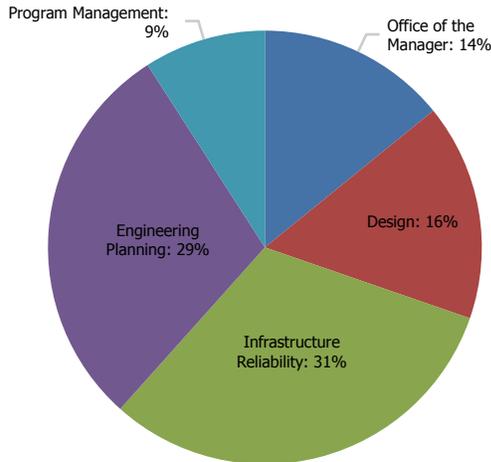


FY 2021/22 BUDGET BY EXPENDITURE

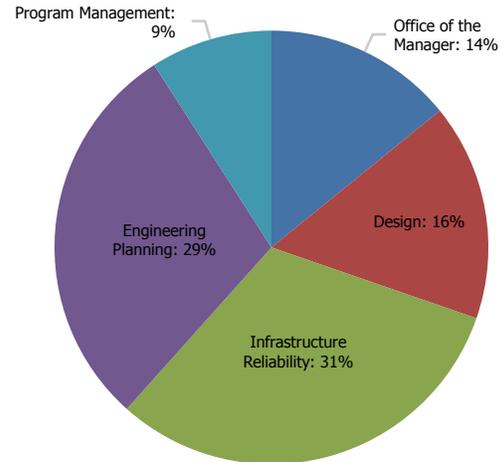


O&M BUDGET BY SECTION

FY 2020/21 BUDGET BY SECTION



FY 2021/22 BUDGET BY SECTION



| | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 | Personnel Budget | | |
|----------------------------|-------------------|-------------------|---------------------|-------------------|---------------------|------------------|------------|------------|
| | | | | | | 19/20 | 20/21 | 21/22 |
| Office of the Manager | 4,204,600 | 5,549,900 | 1,345,300 | 5,817,700 | 267,800 | 2 | 12 | 12 |
| Design | 4,817,400 | 6,131,900 | 1,314,500 | 6,486,800 | 354,800 | 16 | 20 | 20 |
| Infrastructure Reliability | 11,873,700 | 11,946,100 | 72,400 | 12,634,900 | 688,700 | 58 | 51 | 51 |
| Engineering Planning | 10,346,100 | 11,150,600 | 804,500 | 11,707,100 | 556,500 | 41 | 42 | 42 |
| Program Management | 2,623,100 | 3,603,900 | 980,800 | 3,779,200 | 175,300 | 10 | 13 | 13 |
| Total O&M | 33,865,000 | 38,382,500 | 4,517,500 | 40,425,600 | 2,043,100 | 127 | 139 | 139 |

Note - Totals may not foot due to rounding.

PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|----------------|----------------|----------------|---------------------|----------------|---------------------|
| Regular | Total | 320 | 355 | 355 | — | 355 | — |
| | O&M | 131 | 127 | 139 | 12 | 139 | — |
| | Capital | 189 | 228 | 217 | (12) | 217 | — |
| Temporary | Total | 1 | — | — | — | — | — |
| | O&M | 1 | — | — | — | — | — |
| | Capital | 1 | — | — | — | — | — |
| Total Personnel | Total | 321 | 355 | 355 | — | 355 | — |
| | O&M | 131 | 127 | 139 | 12 | 139 | — |
| | Capital | 190 | 228 | 217 | (12) | 217 | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

Engineering Services' O&M and Operating Equipment Biennial Budget is \$39.1 million in FY 2020/21 and \$41.0 million in FY 2021/22 or an increase of 14.9% and an increase of 4.8%, respectively from the prior year budgets. These increases are primarily due to the following factors:

- Salaries and benefits reflect negotiated increases and additional increases due to Engineering Services' new organizational structure which includes additional management positions from the prior budget cycle, support to WSO in the form of additional field engineers, and the need for staff training budgets.
- Professional services reflects specialized technical support for the new project controls and reporting system (PCRS).
- Materials and supplies reflect an increase in software maintenance fees.
- Taxes and permits reflect an increase in the annual dam safety fees paid to the state Division of Safety of Dams (DSOD).

The following are the significant changes by budget year:

FY 2020/21

Personnel-Related Issues

Total personnel levels remain flat at 355 individuals which is consistent with the previous fiscal year. However, the O&M and capital staffing complement differs from the FY 2019/20 budget. This change is primarily due to increased support for Engineering Services' new organizational structure, plant and field engineers' support to WSO, and additional training budgets for staff, thereby resulting in a shift of staff from capital work to O&M in FY 2020/21.

Planned capital spending for FY 2020/21 will remain steady with a district-wide capital budget estimated to be approximately \$250 million (see details in CIP Appendix). Planned spending reflects project budgets and schedules to meet Metropolitan's overall biennial budgetary goals. High priority projects that will continue during the fiscal year include the Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program; the Colorado River Aqueduct (CRA) Reliability Program; the Distribution System Reliability Program; and the Right of Way and Infrastructure Protection Program.

Salaries & Benefits

Salaries and benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget primarily reflects an increase for specialized technical expertise to support the PCRS.

Materials and Supplies

The budget reflects an increase in software maintenance costs (e.g., PCRS, ProjectWise).

Taxes & Permits

The budget reflects an increase in annual dam safety fees paid to the state DSOD.

Other

Other non-labor budget reflects a decrease in rents and leases of copier machines which will now be centralized and funded under the Administrative Services Section of the Office of the Chief Administrative Officer.

FY 2021/22

Personnel-related issues

Total personnel count remains flat at 355 individuals from FY 2020/21.

Planned capital spending for FY 2021/22 will remain steady with a district-wide capital budget estimated to be approximately \$250 million (see details in CIP Appendix).

Salaries & Benefits

Salaries and benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget reflects a decrease in level of support for energy sustainability.

Materials and Supplies

The budget reflects an increase in software maintenance fees (e.g., PCRS, ProjectWise).

Taxes & Permits

The budget reflects anticipated increases in annual dam safety fees paid to the state DSOD.

Operating Equipment – FY 2020/21 and FY 2021/22

The operating equipment budget reflects an increase in FY 2020/21 from the prior budget year primarily due to the replacement of aging vehicles, 3D survey scanner, and other survey equipment. In FY 2021/22, the budget reflects ongoing replacement of vehicles and survey equipment.

This page intentionally left blank.

OFFICE OF CHIEF ADMINISTRATIVE OFFICER

The Office of the Chief Administrative Officer (CAO) provides outstanding value to its customers for a wide range of administrative, environmental planning and security management services

PROGRAMS

Office of the Chief Administrative Officer accomplishes its mission through the following programs or sections:

Administrative Services provides a range of critical services including contracting, inventory management, warehousing, reprographics, technical writing, records management, EForms management, Enterprise Content Management, and administration of Metropolitan's Rideshare Program.

Environmental Planning (EPS) provides expertise for environmentally responsible decision-making and compliance with environmental laws and regulations. EPS ensures Metropolitan activities comply with the California Environmental

Quality Act (CEQA); obtains permits or approvals from federal and state environmental regulatory agencies for Metropolitan activities; and participates in management of Metropolitan reserves and coordination with other non-Metropolitan reserve planning efforts.

Security Management provides cost-effective and innovative protection of Metropolitan's employees, patrons, infrastructure and equipment.

Board Support provides administrative support to the Board and the Office of the Chair; coordinates Metropolitan's board document management system; and coordinates travel for the Board.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/2022, the Office of the Chief Administrative Officer will focus on the following key issues:

Support Proposed Delta Improvements

Provide environmental and technical services to support long-term Delta solutions to improve water supply reliability and water quality, and protect and enhance Delta ecosystem and associated species.

Provide technical and regulatory support for Metropolitan's Delta Island holdings.

Support Development of Water Supplies and Management of Water Reserves

Provide planning, California Environmental Quality Act/National Environmental Policy Act (CEQA/NEPA), and regulatory support for development of new water supplies, including continued planning support for the proposed Regional Recycled Water Program (RRWP).

Prepare CEQA/NEPA and environmental permitting documentation for supplemental water supplies and water conservation measures, including support of Local Resources Programs with member agencies.

Provide strategic environmental compliance input and services to obtain supplemental supplies of water through transfers, banking and innovative crop and land management practices.

Climate Action Planning

Complete preparation of Climate Action Plan (CAP) and associated CEQA documentation to mitigate the significant effects of greenhouse gas (GHG) emissions from Metropolitan projects. Develop and implement GHG monitoring and reporting tools and establish a monitoring schedule. Continue collaboration with internal Metropolitan groups to implement GHG reduction strategies and verify reductions realized. Provide annual Board updates on progress towards meeting CAP goals. Continue to identify and evaluate new GHG reduction strategies for future updates to ensure Metropolitan is meeting its GHG reduction goal.

Regulatory Compliance

Provide timely and professional planning services and CEQA and regulatory support for all capital and O&M projects in an environmentally responsible manner.

Prepare reclamation plans and associated CEQA documentation, coordinate annual inspections, and prepare annual reports for Metropolitan's operations in compliance with the provisions of the Surface Mining and Reclamation Act (SMARA).

Provide increased monitoring support for Desert O&M activities in response to increased regulatory oversight, additional O&M workload to support aging infrastructure, urgent repairs, and longer species monitoring periods resulting from changing climatic conditions.

Support continued restoration and monitoring of populations and habitat of the unarmored threespine stickleback fish in compliance with Metropolitan-sponsored legislation (AB 2488) and long-term Endangered Species Act permits for the inspection and maintenance of the Foothill Feeder.

Provide federal and state legislative review and identify bills and regulations that should be supported or opposed based on Metropolitan's legislative priorities and policy principles.

Reserve Management

Manage Metropolitan's four large-scale multi-species reserves and participate in several other regional conservation and multi-species reserve programs. Management of these reserves is required to satisfy regulatory requirements for the continued delivery of imported water and the construction and operation of major O&M and capital projects.

Serve as Metropolitan's representative on the Southwestern Riverside County Multi-Species Reserve Management Committee, administer a reserve management agreement with Riverside County Parks (Parks), and actively manage reserve lands to ensure compliance with state and federal permits and multi-agency cooperative management agreements, including the Memorandum of Intent

between Metropolitan, Parks, and other members of the Diamond Valley Lake Ad Hoc Committee.

Facilitate collaboration among Metropolitan, Parks, and the Southwestern Riverside County Multi-Species Reserve Management Committee towards implementation of the Trails Plan and construction of multi-use connecting trails between Diamond Valley Lake and Lake Skinner and between the Reserve and the County's Regional Trail System.

Serve as Metropolitan's representative on the Reserve Management Committee for the Lake Mathews Multiple Species Reserve, administer a reserve management agreement with Riverside County Habitat Conservation Agency, and actively manage Lake Mathews reserve lands to ensure compliance with state and federal permits.

Represent Metropolitan on the Lower Colorado River Multi-Species Conservation Program and the Orange County Natural Communities Coalition as voting members of the respective governance committees.

Work collaboratively with Real Property, Engineering Services, and reserve management to facilitate field coordination among stakeholders on issues within the reserves and surrounding areas.

Innovative Solutions

Increase efficiency in procurement practices by streamlining acquisition processes. Enhance customer experience and satisfaction by upgrading warehouse ordering platform and expanding online training modules to further the customer's knowledge in key areas such as requisition processing and agreement administration.

Review administrative functions to promote higher levels of productivity, standardization, and to improve efficiency in key areas such as grant management and document management.

Continue implementation of the Information Governance / Enterprise Content Management (ECM) solution to improve existing storage, access, retrieval and control of physical and electronic records in line with fiscal, legal, and regulatory requirements.

Utilize Metropolitan's EForm Management program to improve business processes, increase

productivity and enhance overall user experience by incorporating mobile technology and adopting innovative and efficient business practices.

Continue to enhance board document management through modernized technology and continued training of District staff on policies and procedures of Board matters.

Sustainability Efforts

Continue the quarterly 'Our Legacy' E-Newsletter series to raise employee awareness on sustainability issues and encourage positive eco-friendly "green" behavior.

Continue efforts to grow and ensure Metropolitan's Rideshare Program remains beneficial for employees and compliant with South Coast Air Quality Management District's regulatory requirements.

Explore opportunities to expand the Electric Vehicle Charging program.

Succession Planning and Employee Development

Continue to implement an organization-wide cross-training program to promote organizational adaptability, institutional knowledge, experience, and expertise.

Continue mentoring of entry-level staff and continue the utilization of Metropolitan's student internship program to provide college students hands on work experience while giving Metropolitan access to future candidates.

Security Management

Implement a Security Strategic plan that is aligned with District goals and objectives and provides for an incremental and phased approach for obtaining resources, including staff, equipment and technology.

Publish specifications for security infrastructure, based on regulatory requirements and industry best practices.

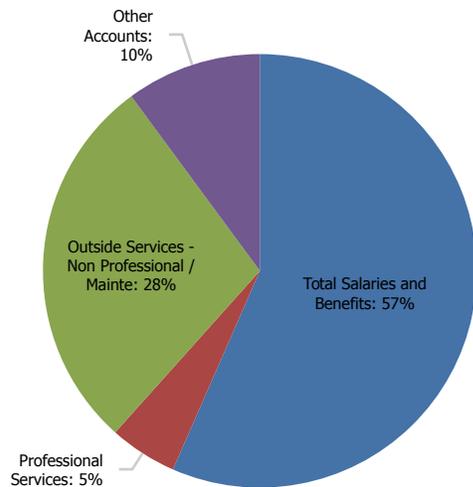
Formalize conceptual approval on capital project plans and specifications to ensure security opportunities and considerations are incorporated.

O&M FINANCIAL SUMMARY

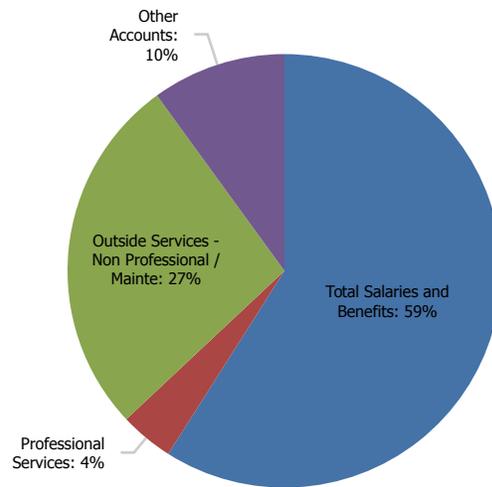
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|--|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Total Salaries and Benefits | 19,169,300 | 21,560,500 | 23,485,200 | 1,924,700 | 24,686,900 | 1,201,700 |
| Direct Charges to Capital | (1,396,200) | (1,863,100) | (2,020,600) | (157,500) | (2,013,500) | 7,100 |
| Total Salaries and Benefits | 17,773,100 | 19,697,400 | 21,464,600 | 1,767,200 | 22,673,400 | 1,208,800 |
| % Change | | 10.8% | | 9.0% | | 5.6% |
| Professional Services | 1,374,900 | 923,900 | 1,924,000 | 1,000,100 | 1,574,000 | (350,000) |
| Outside Services - Non Professional / Mainte | 8,706,600 | 10,233,600 | 10,791,500 | 557,900 | 10,515,500 | (276,000) |
| Rent & Leases | 426,400 | 660,600 | 1,111,600 | 451,000 | 1,118,500 | 6,900 |
| Subsidies & Incentives | 693,600 | 1,029,800 | 841,900 | (187,900) | 843,600 | 1,700 |
| Other Accounts | 2,181,000 | 1,736,600 | 1,923,400 | 186,800 | 1,928,500 | 5,100 |
| Total O&M | 31,155,600 | 34,281,900 | 38,057,000 | 3,775,100 | 38,653,500 | 596,500 |
| % Change | | 10.0% | | 11.0% | | 1.6% |
| Operating Equipment | 246,700 | — | 124,900 | 124,900 | 34,600 | (90,300) |
| Total O&M and Operating Equipment | 31,402,300 | 34,281,900 | 38,181,900 | 3,900,000 | 38,688,100 | 506,200 |
| % Change | | 9.2% | | 11.4% | | 1.3% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE

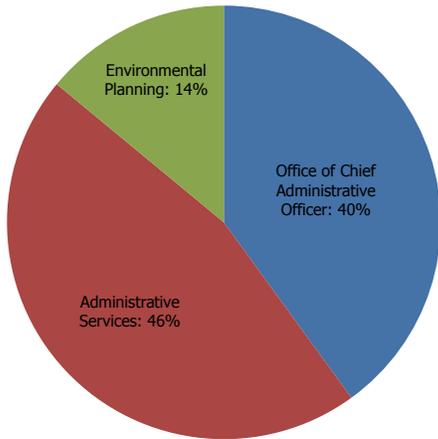


FY 2021/22 BUDGET BY EXPENDITURE

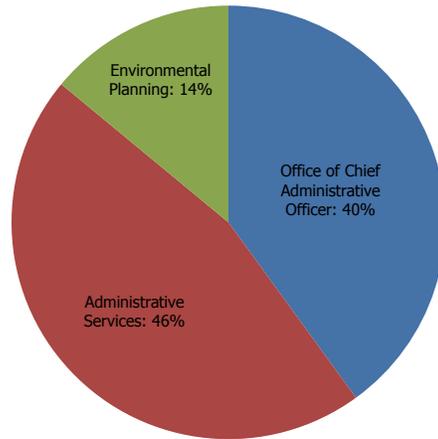


O&M BUDGET BY SECTION

FY 2020/21 BUDGET BY SECTION



FY 2021/22 BUDGET BY SECTION



| | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 | Personnel Budget | | |
|--|-------------------|-------------------|---------------------|-------------------|---------------------|------------------|------------|------------|
| | | | | | | 19/20 | 20/21 | 21/22 |
| Office of Chief Administrative Officer | 12,915,300 | 15,074,200 | 2,158,900 | 15,312,500 | 238,400 | 14 | 16 | 16 |
| Administrative Services | 16,497,500 | 17,639,400 | 1,142,000 | 17,917,400 | 277,900 | 77 | 78 | 77 |
| Environmental Planning | 4,869,100 | 5,343,400 | 474,300 | 5,423,600 | 80,200 | 18 | 14 | 14 |
| Total O&M | 34,281,900 | 38,057,000 | 3,775,100 | 38,653,500 | 596,500 | 108 | 108 | 107 |

Totals may not foot due to rounding.

PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|----------------|----------------|----------------|---------------------|----------------|---------------------|
| Regular | Total | 98 | 113 | 114 | 1 | 114 | — |
| | O&M | 92 | 108 | 106 | (2) | 106 | — |
| | Capital | 5 | 5 | 8 | 3 | 8 | — |
| Temporary | Total | 2 | — | 2 | 2 | 1 | (2) |
| | O&M | 1 | — | 2 | 2 | 1 | (2) |
| | Capital | 1 | — | — | — | — | — |
| Total Personnel | Total | 99 | 113 | 116 | 3 | 115 | (2) |
| | O&M | 93 | 108 | 108 | — | 107 | (2) |
| | Capital | 6 | 5 | 8 | 3 | 8 | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

The Office of the CAO's O&M and Operating Equipment Biennial Budget is \$38.2 million in FY 2020/21 and \$38.7 million in FY 2021/22 or an increase of 11.4% and an increase of 1.3% respectively from the prior budget years. The changes are due primarily to the following factors:

- The development and implementation of Metropolitan's Security Strategic Management Plan requires additional labor and non-labor resources in order to meet vulnerability assessment recommendations.
- Costs are increasing for more stringent and specialized environmental regulatory oversight services for O&M projects throughout Metropolitan's service area.
- A consultant study to determine user needs and establish technical and performance requirements for a new contracts management system.

The following are the significant changes by budget year:

FY 2020/21

Personnel-Related issues

Total personnel count increased by 1 regular full time position and 3 district temporary positions from the FY 2019/20 budget. The increase in labor is necessary in order to provide for additional security management services and temporary labor to support the backfile-conversion of the Enterprise Content Management project.

The budget also reflects an increase in capital labor necessary for environmental planning and permitting.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget reflects an increased need for specialized technical expertise related to environmental planning for the Surface Mining and Reclamation Act, Climate Action Planning, Desert/CRA environmental monitoring, and the restoration and monitoring associated with the Foothill Feeder shutdown. The budget also includes funding to determine the technical requirements necessary for a new contracts management system.

Non-Professional Services

The budget increase from FY 2019/20 is associated with increased security staffing and coverage, as well as an increase in certified security services.

Rents and Leases

The budget increase reflects centralization of costs associated with District-wide reprographics copiers to the Administrative Services Section. Commensurate cost reductions have taken place across Metropolitan to account for this centralization.

Subsidies and Incentives

The budget decrease from FY 2019/20 reflects the current employee usage rate for Metropolitan's Rideshare program.

Other

The budget increase reflects the need for additional environmental permitting for California Department of Fish and Wildlife, as well as travel and conferences for the Board.

FY 2021/22

Personnel–Related issues

Total personnel count decreased by two district temporary positions from the FY 2021/22 budget, reflecting completion of the backfile-conversion of the Enterprise Content Management project.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget decrease is due to completion of the study for the replacement of a contract management system and reduced environmental monitoring during the Foothill Feeder Dewatering/Shutdown project related to the Unarmored Threespine Stickleback fish.

Non-Professional Services

The budget decrease is due to the completion of one-time costs associated with the rebid and transition of Metropolitan's storage contract in the prior period.

Operating Equipment - FY 2020/21 and FY 2021/22

The operating equipment budget reflects the need for the replacement of a forklift in Metropolitan's warehouse. Additionally, an increase in service demand necessitates the purchase of specialized reprographics equipment.

This page intentionally left blank.

INFORMATION TECHNOLOGY

Information Technology provides innovation and outstanding value to its customers for a wide range of technical services and enterprise business solutions.

PROGRAMS

Information Technology provides innovation and value to its customers for a wide range of technical services and enterprise business solutions. The group collaboratively works with customers to deliver information technology options, services, and solutions in the areas of enterprise and business applications, Engineering Services and Water System Operations applications, data analytics, mobile/wireless computing, telecommunications, network services, cybersecurity, project management and personal computing.

Office of Group Manager oversees the management of the Information Technology (IT) group by providing strategic leadership on initiatives and capital investments to improve operational efficiencies, enhance reliability & cybersecurity capabilities, and deliver innovative options and solutions.

Cybersecurity focuses on security standards and policies to enhance Metropolitan's cybersecurity posture and to ensure protection against evolving and increasing cyber threats.

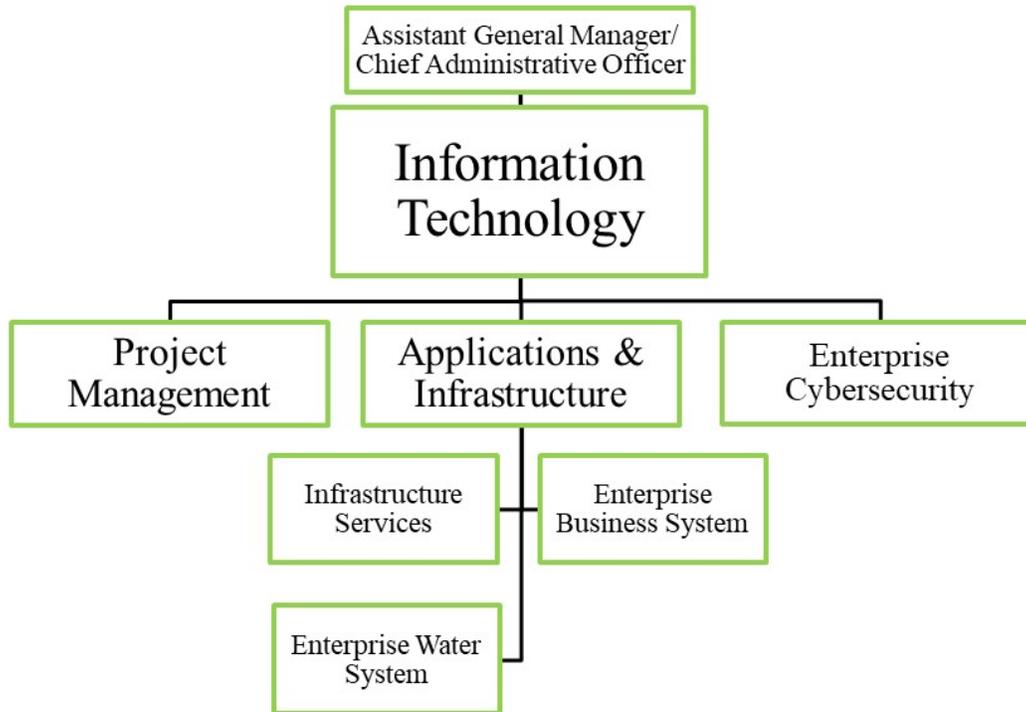
Project Management Office is responsible for the overall governance and project management of the IT program and project portfolio.

Office of IT Section Manager manages and supports IT business and service areas related to IT infrastructure, enterprise business and water systems.

IT Infrastructure monitors, manages, and maintains Metropolitan's enterprise-wide infrastructure services related to telecommunications, networks, servers, data center operations, and related client services.

Enterprise Business Systems develops and supports enterprise and business software applications and business intelligence systems.

Enterprise Water Systems provides services, solutions, and systems that support business functions in Engineering Services and Water Systems Operations.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, IT will focus on the following key areas in support of the General Manager’s strategic priorities:

- Cloud First Technology
- Data Center Modernization
- Cybersecurity Operations Center
- IT Capital Investment Plan
 - SCADA Control System
 - Replace end-of-life systems
 - IT Infrastructure Upgrades

Business Technology & Process Enhancement

Beginning with FY 2018/19, the IT group began establishing the foundation to support Metropolitan’s move toward the cloud. The implementation of cloud solutions will enhance productivity, streamline business processes, and mitigate costs for the organization.

During the FY 2020/21 and FY 2021/22 biennium, IT will continue to implement projects in support of Metropolitan’s strategic initiatives, including continued migration to mobile technology and strengthening Metropolitan’s cybersecurity

capabilities by deploying new and emerging technologies and implementing enhanced security countermeasures. In addition, the planned technology upgrades will provide greater visibility and consolidation of IT costs and performance.

Information Systems Upgrades and Projects

IT continues to improve partnerships with other business areas to enhance the capabilities of systems that achieve Metropolitan’s operational goals and objectives. The following key projects include IT deliverables that add value to the group’s business customers:

Office of the COO

The Water Systems Control Master Plan provided a road map to fully coordinate and further protect the operational and business investments of Metropolitan’s SCADA systems. The master plan defined a multi-phased approach for replacing/upgrading the control system critical to Metropolitan’s operations, water delivery, water quality, and infrastructure monitoring. The first

phase of this project has been initiated and the RFQ was published to select viable technology platforms.

Continue to upgrade the control and electrical protection systems at the Wadsworth Pumping Plant to ensure continued reliability of the facility.

AMR System RTUs and Radio Modem Upgrade - Project phases include the upgrade of the Automatic Meter Reader (AMR) system, implementation of radio modems, and replacement of the Remote Terminal Units (RTUs) in support of updating obsolete equipment.

Flow Scheduler Project includes the development of a software tool that will streamline member agency flow change requests and enhance the process of Metropolitan operators logging flow demand data.

Maximo Mobile Computing Upgrade aims to replace existing mobile devices, used in Water Systems Operations, with mobile technology. This effort will enhance access to business information and vastly increase the functionality of the existing equipment.

As part of the infrastructure reliability objective, the Asset Monitoring and Management System project seeks to develop a common framework to manage condition monitoring across Metropolitan's operations.

The Laboratory Instrumentation Data Interface Project will upgrade end-of-life equipment at Metropolitan's Water Quality Laboratory at Weymouth Treatment Plant. This effort will also facilitate integrated data acquisition and automation to streamline operations within the laboratory framework.

Fuel Management System Upgrade seeks to upgrade the system that enables management controls over fuel inventories, dispensing, and security to ensure operability, vendor support, and system reliability at Metropolitan facilities as a continuation of the refurbishment initiative.

Office of the CAO

As part of the Data Center Modernization Project, the scope includes assessment, design, and planning for the modernization and upgrade of

Metropolitan's data center(s) to meet current and future needs while enhancing our resiliency and redundancy capabilities.

The Cybersecurity Project will assess and remediate potential vulnerabilities and evolving cyber threats with an emphasis on implementing a security operations center (SOC) at Metropolitan.

Board Room Technology Upgrade - This project will upgrade audio, video and information technology-related equipment in the main board room and all committee rooms at Metropolitan's headquarters building.

Continue to partner with Administrative Services on the Enterprise Content Management (ECM) project for the implementation of an ECM application and for the optimization of digital assets on Metropolitan's network storage devices. Once fully implemented, the ECM system will provide a framework for collaboration, automation, and enhancements of core business processes.

Continue deployment of upgrades to improve the reliability, performance, and capacity of Metropolitan's wireless network infrastructure comprising microwave radio wide-area networks (WANs) and wireless access point local-area networks (LANs).

Office of the CFO

The Budget System Replacement Project will replace Metropolitan's budgeting system to support the development of capital and O&M budgets and Board deliverables. The current budget system has reached end-of-life and cannot be upgraded.

The Water Information Systems (WINS) upgrade will include much needed enhancement features to Metropolitan's water billing system to allow for automation and increased mobile functionality.

The Data Warehouse Project will develop data marts modeling for business areas providing integrated reporting through Extraction/Transformation/Loading (ETL) procedures and common dimensions. The Enterprise Data Warehouse will contain both business and operational data and will be designed to combine these various data types to meet operational needs and support decision making.

The Payroll/Timekeeping project seeks to upgrade and enhance PeopleSoft payroll and replace the current timekeeping software with a package that integrates with the payroll system and provides for ease-of-use interface for customers.

External Affairs, Legal, and Risk Management

Metropolitan's public-facing website, mwdh2o.com, is being redesigned to stay current with the latest technology, mobile compatibility, and greater functionality and features.

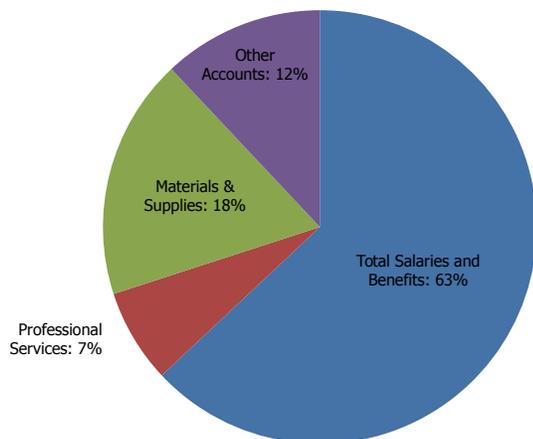
The Incident Reporting System Project will upgrade the current end-of-life incident tracking and reporting tool used for compliance tracking by Risk Management, Workers Compensation, Safety and Regulatory Services, and WSO.

O&M FINANCIAL SUMMARY

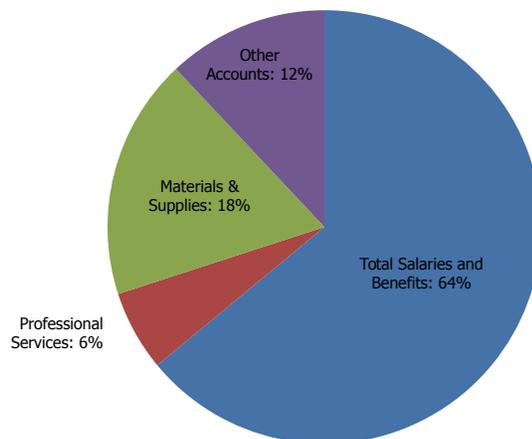
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|--|--------------------|--------------------|--------------------|------------------------|--------------------|------------------------|
| Total Salaries and Benefits | 28,587,300 | 30,801,300 | 31,686,900 | 885,600 | 33,340,600 | 1,653,700 |
| <i>Direct Charges to Capital</i> | <i>(1,871,300)</i> | <i>(1,392,100)</i> | <i>(1,465,500)</i> | <i>(73,400)</i> | <i>(1,491,000)</i> | <i>(25,500)</i> |
| Total Salaries and Benefits | 26,716,000 | 29,409,200 | 30,221,400 | 812,200 | 31,849,600 | 1,628,200 |
| % Change | | 10.1% | | 2.8% | | 5.4% |
| Professional Services | 527,200 | 1,849,000 | 3,212,800 | 1,363,800 | 2,864,100 | (348,700) |
| Communication Expenses | 1,807,800 | 1,609,500 | 1,932,900 | 323,400 | 2,060,400 | 127,500 |
| Equipment Expensed | 184,000 | 2,306,600 | 1,302,500 | (1,004,100) | 495,000 | (807,500) |
| Materials & Supplies | 5,836,000 | 6,423,700 | 8,395,200 | 1,971,500 | 9,117,200 | 722,000 |
| Outside Services - Non Professional / Mainte | 93,800 | 202,800 | 734,100 | 531,300 | 1,080,300 | 346,200 |
| Repairs & Maintenance - Outside Services | 833,000 | 1,442,500 | 1,343,300 | (99,200) | 1,643,700 | 300,400 |
| Other Accounts | 272,300 | 418,300 | 511,300 | 93,000 | 529,800 | 18,500 |
| Total O&M | 36,270,100 | 43,661,600 | 47,653,500 | 3,991,900 | 49,640,100 | 1,986,600 |
| % Change | | 20.4% | | 9.1% | | 4.2% |
| Operating Equipment | 751,000 | 748,400 | 935,500 | 187,100 | 528,100 | (407,400) |
| Total O&M and Operating Equipment | 37,021,100 | 44,410,000 | 48,589,000 | 4,179,000 | 50,168,200 | 1,579,200 |
| % Change | | 20.0% | | 9.4% | | 3.3% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE



FY 2021/22 BUDGET BY EXPENDITURE



PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Regular | Total | 120 | 134 | 130 | (4) | 130 | — |
| | O&M | 113 | 127 | 123 | (4) | 123 | — |
| | Capital | 7 | 7 | 7 | — | 7 | — |
| Temporary | Total | 4 | 2 | 2 | — | 2 | — |
| | O&M | 4 | — | 2 | 2 | 2 | — |
| | Capital | 1 | 2 | — | (2) | — | — |
| Total Personnel | Total | 125 | 136 | 132 | (4) | 132 | — |
| | O&M | 117 | 127 | 125 | (2) | 125 | — |
| | Capital | 7 | 9 | 7 | (2) | 7 | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

The Information Technology O&M biennial budget supports the need for Metropolitan to remain resilient, sustainable and innovative. This budget includes critical end-of-life upgrades of PCs, software upgrades, risk mitigation (cybersecurity), infrastructure replacement and refurbishment (data center relocation and modernization), transition to cloud-based computing and innovative technologies to support business process improvements.

Information Technology’s biennial O&M and Operating Equipment budget is \$48.6 million in FY 2020/21 and \$50.2 million in FY 2021/22 or an increase of 9.4% and an increase of 3.3% respectively from the prior budget years. The changes are due primarily to the following key factors:

- Salaries and Benefits reflect negotiated labor increases and the reduction of four positions in FY 2020/21.
- The PC Replacement Project will continue with the phased approach at replacing aging PCs and related equipment in FY 2020/21. The equipment expense category will reduce from \$1.3 million to \$0.49 million in FY 2021/22 as IT transitions to an “on-going” refresh of PCs beginning in FY 2021/22.
- As part of the Headquarters Improvement Program, IT will be responsible for coordinating the move of IT equipment (e.g., PCs, telephones, and networking) during the temporary relocation of staff.
- New services within this biennial budget include costs associated with datacenter modernization to mitigate risk to Metropolitan while providing greater redundancy and resiliency capabilities.
- As part of the Cloud First strategy, this biennial budget includes new cloud services and consulting to facilitate the transforming of IT services to the cloud environment.

The following are significant changes by budget year:

FY 2020/21

Personnel–Related matters

Total personnel count decreased from 134 to 130 FTEs for the FY 2020/21 budget, reflecting the reduction of four positions.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget reflects IT support for the PC replacement project, HQ relocation, on-call services for application enhancements, transition to cloud-based computing and other strategic IT priorities.

Communication Expenses

The budget reflects increases in communication expenses including co-location (for redundancy and resiliency), cloud-based connections (Oracle FastConnect & Microsoft Azure ExpressRoute), new circuits for field locations and increased capacity (bandwidth) to support Metropolitan's operational needs.

Equipment Expensed

The budget decrease from FY 2019/20 reflects the decrease in planned procurement of PC hardware for the PC Replacement Project.

Materials and Supplies

The budget reflects increased levels of software licensing/support agreements as a result of three primary areas:

- Cloud computing
- Critical cybersecurity enhancements
- New Capex to Opex for software purchases, subscriptions and maintenance

Telecommunication

The budget reflects increases in telecommunication expenses including co-location (for redundancy and resiliency), cloud-based connections (Oracle FastConnect & Microsoft Azure ExpressRoute), new circuits for field locations and increased capacity (bandwidth) to support Metropolitan operational needs.

Repairs and Maintenance

No significant change in repairs and maintenance for FY 2020/21.

Equipment Expensed

Equipment expenses include procurement of PC hardware for the PC replacement project.

FY 2021/22

Personnel–Related issues

Total regular personnel for O&M remained at 130 FTEs reflecting the reduction of four Business Analyst positions in prior FY2020/21. Salaries and Benefits reflect negotiated labor increases.

Professional Services

No significant budget change in professional services for FY 2021/22. Key budgetary within this category include reduction in professional services as the PC Replacement Project reaches substantial completion, which is off-set by increases in remote data-center cost (primary & secondary).

Communication Expenses

The budget increase in communication expenses includes inflationary factors and new circuits to support Metropolitan operational needs.

Equipment Expensed

The budget reduction in equipment expensed is primarily attributed to completion of the PC Replacement project.

Materials and Supplies

The budget reflects inflationary increases for software licensing/support agreements, continued transformation to cloud computing and new capex to opex expenses associated with deployment of capital projects.

Non-Professional Services

The budget increase includes planned expenses for primary and secondary datacenters as part of Metropolitan's datacenter modernization initiative.

Repairs and Maintenance

Increases to the budget for repairs and maintenance are attributed to hardware equipment (servers) coming off warranty and going on extended support agreements.

Operating Equipment - FY 2020/21 and FY 2021/22

The operating equipment budget reflects the critical replacement of IT equipment that has reached end-of-life, including network equipment, audio/video systems for conference rooms, hardware (servers and storage devices) and replacement of service vehicles used to maintain IT systems located throughout Metropolitan's service area.

The operating equipment budget increase in FY 2020/21 is primarily attributed to the replacement of end-of-life networking equipment that is critical to Metropolitan's wide-area-network communication that services the entire Los Angeles basin area.

The operating equipment budget decrease in FY 2021/22 is a result of fewer IT equipment replacements.

HUMAN RESOURCES

Human Resources (HR) strategically, and cost effectively, recruits, retains, motivates, rewards, and develops Metropolitan's employees.

PROGRAMS

The focus of Human Resources is to work closely with management to foster effective management; prepare to meet future workforce challenges; partner with customers on solutions; and provide excellent HR services that ensure compliance to numerous HR laws, regulations, and responsibilities.

The Human Resources Group partners with others across the organization to provide custom services and solutions that address current and future gaps in skills, knowledge, and abilities.

HR services include employee and labor relations, recruitment and selection, equal employment opportunity (EEO), HR Strategic Partnering, HR Information Systems, benefits, retirement, leave administration, classification and compensation administration, medical screening, workers' compensation, training, organizational development, workforce and career development, and HR business support services.

HR accomplishes its mission through the following programs or sections:

Office of Human Resource Group Manager provides strategic leadership and direction for Metropolitan's Human Resources functions. Organizations reporting directly to the Office of the Human Resource Group Manager include Employee Relations and Human Resources Services.

The office also has responsibility for diversity, inclusion, and investigating internal complaints of unlawful discrimination. EEO investigations entail staff meeting with complainants, interviewing witnesses, and issuing findings as to whether allegations of unlawful discrimination can be substantiated. This work is critical in

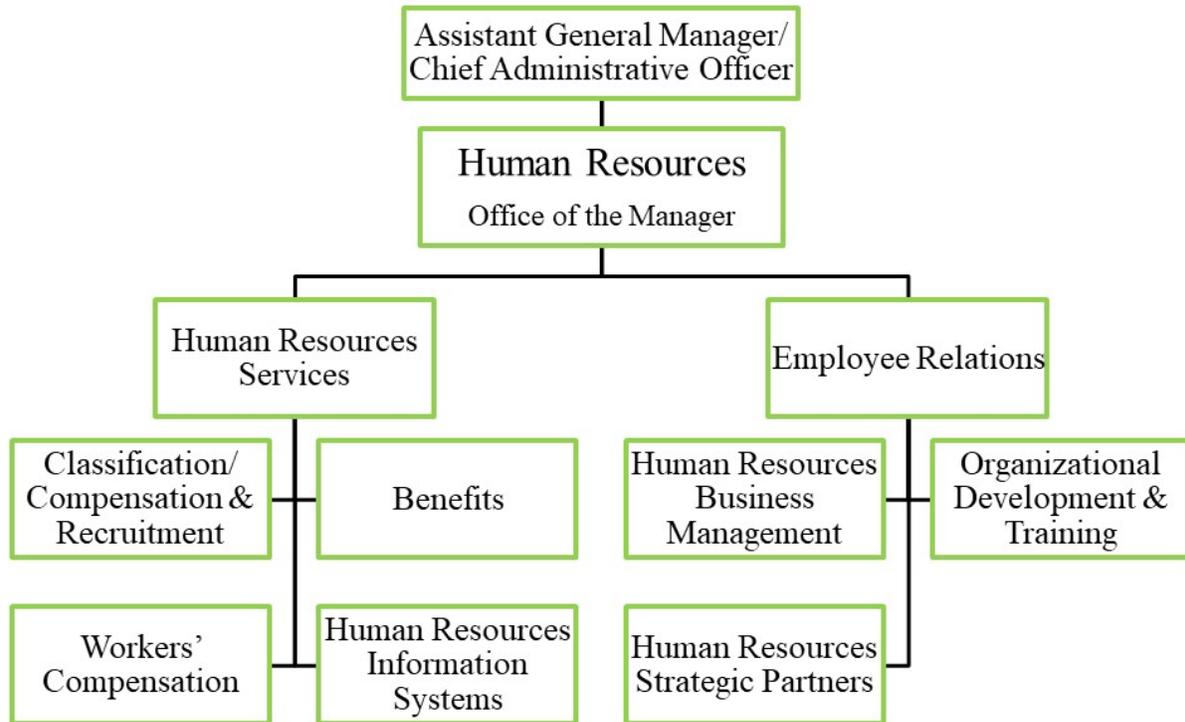
ensuring that Metropolitan maintains a workplace free of discrimination and harassment. Diversity and inclusion includes partnering with Employee Resource Groups and external affinity groups to outreach to future applicants.

Employee Relations is responsible for fostering harmonious labor relations between Metropolitan and its four certified bargaining units, and plays a key role in contract negotiations. The staff also serves as a resource to managers and supervisors on such matters as grievances, disciplinary actions, and workplace conflicts. The section also provides ongoing training to managers on all facets of employer-employee relations.

HR has designated HR Strategic Partners to serve as single points of contact for managers, providing HR support in several areas, including Employee Relations, recruitment, training, succession planning, and strategic development.

Human Resources Services is responsible for the strategic design and implementation of Metropolitan's compensation, benefits, recruitment. The section leads and participates in continuous process improvement and cost optimization studies for all plans. Responsibilities include job analysis, market assessments, recruitment, active employee and retiree benefit program administration, partnering with management on new initiatives, compliance, Workers Compensation, medical screening and implementing new programs and agreements.

Finally, staff under Human Resources Information Systems administer Metropolitan's MyHR system, and serve as a critical liaison between HR and the Information Technology Group.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, HR will focus on the following key issues that support the General Manager's objective of Employee Development and additional HR priorities:

Ensure Effective People Management

Strong people management skills are essential to meeting Metropolitan's future challenges and successes. HR will ensure that the role of management is defined and that current managers have the tools and training needed to provide effective management.

A formal, multi-tiered Management and Leadership Development program will help managers better understand their roles and responsibilities as they progress through management.

Learning opportunities will be provided to employees to prepare for future management positions from the entry-level manager all the way to the executive level.

Ongoing events, workshops and forums will provide opportunities to deliver consistent expectations and tools for management, including motivating and valuing employee contributions.

Strengthen Partnerships with HR Customers

Effective people solutions require that HR partners with its customers, including management, unions, employees, retirees and others. HR must understand the customer's business needs and then build working relationships that develop effective solutions to people-related challenges. This working partnership will minimize misdirected efforts, speed decision-making, reduce rework and, ultimately, produce a better workplace at a reduced cost.

Strengthened HR/customer partnerships and communications will identify areas for improvement in HR products, services, support and messaging.

Ensure that Risk Management, Employee Relations, EEO and the Legal Department coordinate to effectively defend against litigation of liability claims and to cost-effectively resolve claims.

Prepare to Meet Challenges of Future Workforce Changes

On average, about 100 employees per year are retiring and this trend is expected to continue over the next several years. As experienced and knowledgeable employees retire, HR will continue to support and expand upon on-going succession planning efforts underway.

Efforts will include a focus on learning, development, knowledge capture, cross-training opportunities, and building pipelines for future vacancies.

HR will develop new strategies, support existing efforts and ensure Metropolitan remains competitive when compared to other organizations.

HR will support career development activity undertaken by employees to enhance knowledge, skills, and abilities for future work and promotional opportunities, including support of internship and mentoring initiatives.

Provide Excellent Human Resources Services

HR provides a wide range of services and support from pre-hire to retirement, impacting almost every aspect of the organization. To make the maximum contribution, all HR functions must serve as trusted advisors that speak with one voice, listen well and provide consistent guidance on people-related matters.

HR's recent reorganization is designed to improve customer service, provide stronger support to employees, and is aimed at developing the next generation of leaders through training, Management Academy, and recruitment.

HR will continue to simplify policies, processes, and procedures to reduce the costs of HR administration by utilizing technology, reducing redundancies and implementing new approaches to existing services.

HR will develop standard reports to enhance management access to employee data and assist with decision-making.

HR will administer a full-range of benefit services for health, leave, deferred compensation and retirement programs.

HR will continue to review the recruitment process and procedures to improve quality of hire and time-to-fill.

Ensure Compliance with Laws and Regulations

HR manages compliance to four MOUs and the Administrative Code, and addresses many sensitive and confidential personnel issues.

HR will continue to monitor a wide array of changing legal and regulatory requirements while adapting HR processes and systems to conform to these changing requirements.

HR will ensure Metropolitan meets Equal Employment Opportunity requirements and numerous Federal, State, and Local laws and regulations and Public Sector codes and rulings.

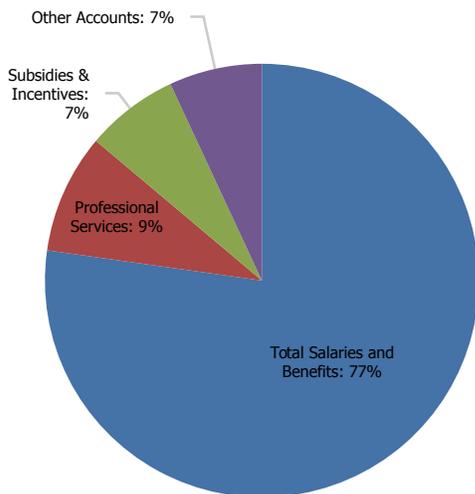
HR will maintain fiduciary responsibilities in the management of financial and retirement programs and comply with the Affordable Care Act and with all privacy and data security requirements.

O&M FINANCIAL SUMMARY

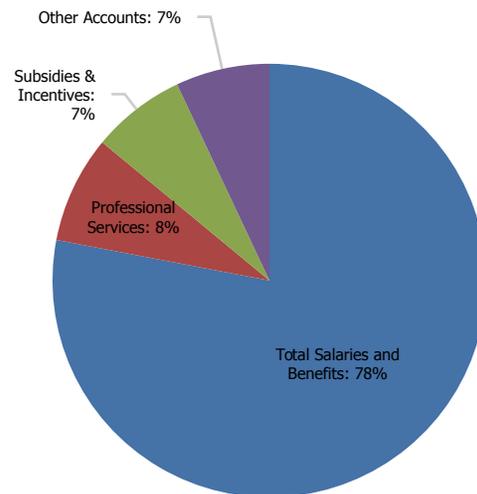
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|---|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Total Salaries and Benefits | 9,843,600 | 9,973,600 | 11,066,200 | 1,092,600 | 11,629,400 | 563,200 |
| <i>Direct Charges to Capital</i> | <i>(98,100)</i> | — | — | — | — | — |
| Total Salaries and Benefits | 9,745,500 | 9,973,600 | 11,066,200 | 1,092,600 | 11,629,400 | 563,200 |
| % Change | | 2.3% | | 11.0% | | 5.1% |
| Professional Services | 1,232,600 | 1,126,700 | 1,221,200 | 94,500 | 1,242,700 | 21,500 |
| Advertising | 208,000 | 140,000 | 225,000 | 85,000 | 230,000 | 5,000 |
| Outside Services - Non Professional / Mainte | 200,900 | 231,500 | 240,300 | 8,800 | 240,300 | — |
| Subsidies & Incentives | 912,400 | 961,500 | 974,800 | 13,300 | 974,800 | — |
| Training & Seminars Costs | 208,300 | 177,700 | 146,100 | (31,600) | 146,300 | 200 |
| Other Accounts | 314,500 | 270,500 | 403,500 | 133,000 | 404,800 | 1,300 |
| Total O&M | 12,822,200 | 12,881,500 | 14,277,100 | 1,395,600 | 14,868,300 | 591,200 |
| % Change | | 0.5% | | 10.8% | | 4.1% |

Note – Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE

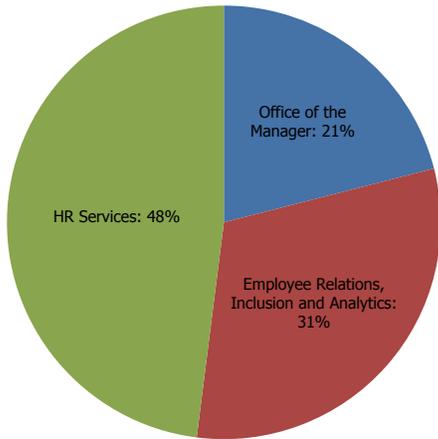


FY 2021/22 BUDGET BY EXPENDITURE

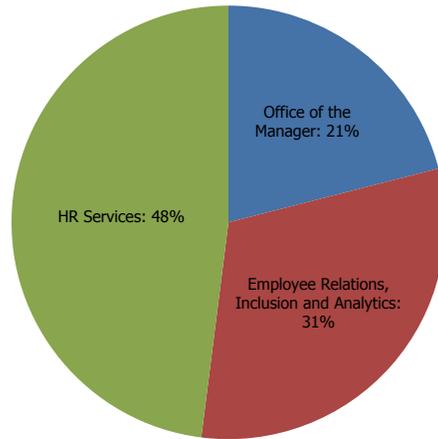


O&M BUDGET BY SECTION

FY 2020/21 BUDGET BY SECTION



FY 2021/22 BUDGET BY SECTION



| | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 | Personnel Budget | | |
|---|-------------------|-------------------|---------------------|-------------------|---------------------|------------------|-----------|-----------|
| | | | | | | 19/20 | 20/21 | 21/22 |
| Office of the Manager | 3,488,700 | 2,967,400 | (521,300) | 3,121,200 | 153,800 | 7 | 8 | 8 |
| Employee Relations, Inclusion and Analytics | 3,254,700 | 4,410,800 | 1,156,100 | 4,567,600 | 156,900 | 11 | 11 | 11 |
| HR Services | 6,138,100 | 6,898,900 | 760,800 | 7,179,400 | 280,500 | 24 | 28 | 28 |
| Total O&M | 12,881,500 | 14,277,100 | 1,395,600 | 14,868,300 | 591,200 | 42 | 47 | 47 |

Totals may not foot due to rounding.

PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|----------------|----------------|----------------|---------------------|----------------|---------------------|
| | | Regular | Total | 39 | 42 | 42 | — |
| | O&M | 38 | 42 | 42 | — | 42 | — |
| | Capital | 1 | — | — | — | — | — |
| Temporary | Total | 7 | — | 5 | 5 | 5 | — |
| | O&M | 7 | — | 5 | 5 | 5 | — |
| | Capital | — | — | — | — | — | — |
| Total Personnel | Total | 45 | 42 | 47 | 5 | 47 | — |
| | O&M | 45 | 42 | 47 | 5 | 47 | — |
| | Capital | 1 | — | — | — | — | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

HR's Biennial Budget is \$14.3 million in FY 2020/21 and \$14.9 million in FY 2021/22 or an increase of 10.8% and an increase of 4.1% respectively from the prior budget years. The changes are due primarily to the following factors:

- Professional services increase in both years due to increased organizational and employee development training and programs, and increased recruitment activities. Additionally, there were increases to Metropolitan's Workers' Compensation third-party contract.
- Rents and Leases increase due to the Union Station Headquarters Improvement Project.

The following are the significant changes by budget year:

FY 2020/21

Personnel–Related issues

Personnel count increased by five District Temporary positions from the FY 2019/20 budget in order to accommodate increased recruitment and classification workload, HRIS administration, as well as succession planning for future vacancies.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget reflects increases as a result of bargaining unit negotiations. The budget also reflects increases in Recruitment, Organizational and Employee Training Programs, as well as an increase to the Workers' Compensation agreement.

Advertising

The budget reflects an increase as a result of an increase in recruitment activity.

Other

The budget reflects a net increase in Software Licensing & Support, Rents & Leases, and Equipment Expensed.

FY 2021/22

Personnel–Related issues

Personnel count remains flat from FY 2020/21.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget reflects increases in Recruitment, Organizational and Employee Training Programs, as well as an increase to the Workers' Compensation agreement.

REAL PROPERTY

Real Property applies strategic approaches to the acquisition, management and protection of Metropolitan's real property assets, and seeks to effectively optimize revenues and control land management costs.

PROGRAMS

The Real Property group accomplishes its mission through the following programs or organizations:

Office of the Group Manager includes Business Management, Planning & Acquisition, Property Management, and Asset Management. The Group Manager directs the group's efforts in planning acquiring, and managing Metropolitan's real property assets; is responsible for the development of real property policies and strategies to centralize Metropolitan's land activities to ensure properties are maintained, secured, and protected for present and future needs.

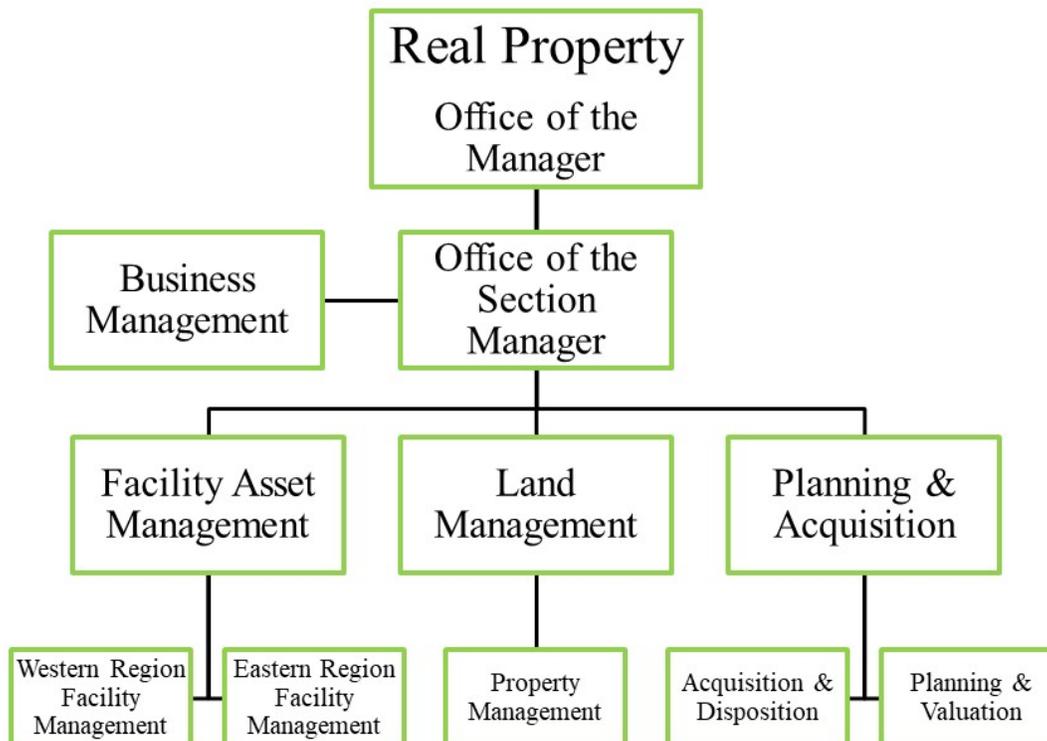
Business Management monitors and tracks the group's business plan, financial and budgetary initiatives; and provides administrative and business process support. In addition, the Team handles property tax payments, lease payments, provides contract support, and board letter and report coordination.

Planning & Acquisition is responsible for right of way planning and acquisition of real property and

real property rights for future conveyance and distribution programs and existing infrastructure rehabilitation programs. The unit is also responsible for the disposition of surplus properties.

Property Management is responsible for managing Metropolitan's real property assets, processing requests for secondary uses of real property and identification of properties that are excess to Metropolitan's needs. In addition, the Unit is responsible for the protection of Metropolitan's real property including site inspections, trespass and encroachment resolution.

Asset Management is responsible for management of Metropolitan's headquarters facility, the DVL Visitor Center and provides management and maintenance of employee housing.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, Real Property will focus on the following key issues:

Centralized Management of Metropolitan's Real Property Assets

Continue with a centralized management approach of Metropolitan's real property assets to ensure properties are regularly maintained, secured and protected for present and future needs.

Continue and complete the managerial reorganization of employee housing to the Real Property Group.

Implement and test a staffing plan, a maintenance/replacement schedule and cost estimates for the property management of approximately 100 desert housing units.

Continue to budget, administer, and provide property and facility management services for the leased office space in Sacramento, Washington DC, and San Diego.

Continue facility management direction and logistical support throughout the Union Station

Headquarters Improvement Project.

Real Property Asset Protection & Stewardship

Monitor legislation regarding eminent domain, relocation assistance, and public agency real estate acquisition and appraisal practices.

Provide timely and suitable responses to property adjacent projects, land developments, and environmental proceedings.

Complete property management and right-of-way operating policies to reflect contemporary best practices.

Implement a new web-enabled right of way software and property management solution to improve processes to monitor financial compliance with terms and conditions of licensing and leasing agreements such as invoicing, insurance coverage, and accounts receivable.

Develop a staffing and implementation plan to detect and address right-of-way encroachments

upon Metropolitan properties with a collaborative cross-functional approach to prioritize and remediate the highest risk conditions.

Complete annual reviews to identify properties that are excess to Metropolitan's needs, and bring information to the Board for action to declare those properties surplus.

Coordinate a monthly cross-functional Property Review Council to review land-use requests by public and private entities to ensure Metropolitan's rights-of-way, facilities, environmental reserves and water quality are protected.

Complete annual site inspections of conveyed property to identify and correct any conditions in conflict with terms and conditions of the conveyance agreements.

File possessory tax reports and tax payments to appropriate counties on time.

Bay Delta Properties

Complete and start implementation of a specific comprehensive Land Management Plan to optimize use and best land owner management practices.

Maximize utilization of the 20,000 acres of agricultural lands and revenue-leases purchased in the Delta to offset costs of land ownership.

Ensure Water Reclamation District assessments, local property taxes and coalition fees are paid on time.

Provide support to the Delta conveyance and habitat rehabilitation efforts.

Palo Verde Valley Properties

Complete and start implementation of a specific comprehensive Land Management Plan to optimize use and best land owner management practices.

Manage Metropolitan's 29,000 acres of agricultural lands and revenue-leases to encourage a vibrant farming economy, water conservation, and to offset costs of land ownership.

Ensure Palo Verde Irrigation District water tolls, local property taxes, and coalition fees are paid by

the farmers and lease-holders on time.

Diamond Valley Lake Recreation and Management

Identify infrastructure improvements as part of the Diamond Valley Lake Recreation capital appropriation. These projects will enhance recreational opportunities and promote economic self-sustainability.

Explore marina and other recreational opportunities to expand lease revenues, and collaborate with the stakeholders of the DVL Recreation Area Memorandum of Intent.

Identify additional DVL land considered excess to Metropolitan's needs, and bring to the Board for action to declare those properties surplus.

Right of Way Planning, Acquisition & Disposition

Provide right-of-way planning and acquisition of real property and real property rights, including appraisal and relocation services, for future conveyance and distribution programs and infrastructure rehabilitation programs. These include the Regional Recycled Water Program, Right of Way & Infrastructure Protection Program and the Prestressed Concrete Cylinder Pipeline Rehabilitation Program.

Other projects include the CRA Reversionary Interest that is tied to the 1932 Act, which supports water supply reliability. Lastly, services include disposition of surplus properties.

Facility & Energy Management

Continue to optimize the cost of maintaining Metropolitan's headquarters building and DVL Visitor's Center while supporting Metropolitan's sustainability initiatives established by the Building Owners and Managers Association and EPA's voluntary ENERGY STAR program.

Execute a multi-year strategic approach to manage critical rehabilitation projects at Metropolitan's Headquarters as the equipment, components, and furnishings reach the end of their useful life cycle.

Complete an architectural plan and begin implementation to paint, carpet, and replace

cubicle/modular furniture on all floors of the Headquarters facility.

Continue to manage employee relocations during the construction phase of the Union Station Headquarters Improvement Project.

Complete a multi-year plan, implemented in the prior budget cycle, to replace asphalt and pavement at DVL recreation areas and roads.

Workforce Development & Succession Planning

Expand knowledge, skills, and abilities of staff through training, succession planning, and educational workshops.

Engage with local universities and professional societies to promote Metropolitan employment opportunities.

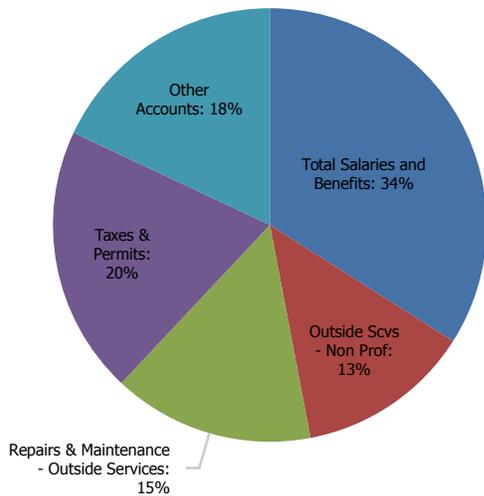
Collaborate with public agencies to identify areas where consistent real property best practices can be applied.

O&M FINANCIAL SUMMARY

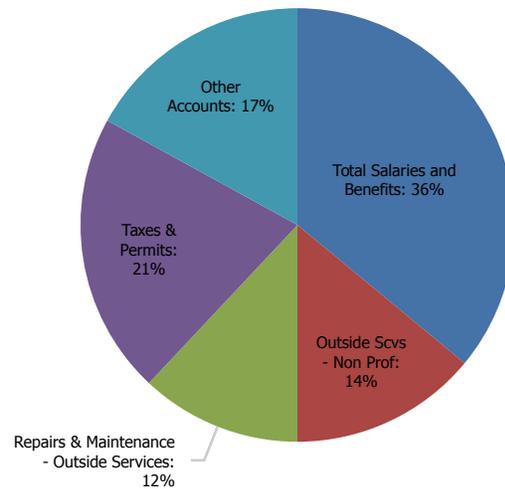
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|--|-------------------|-------------------|--------------------|------------------------|--------------------|------------------------|
| Total Salaries and Benefits | 8,964,000 | 10,403,200 | 12,262,100 | 1,858,900 | 12,742,300 | 480,200 |
| <i>Direct Charges to Capital</i> | <i>(490,300)</i> | <i>(117,900)</i> | <i>(1,813,100)</i> | <i>(1,695,200)</i> | <i>(1,939,000)</i> | <i>(125,900)</i> |
| Total Salaries and Benefits | 8,473,700 | 10,285,300 | 10,449,000 | 163,700 | 10,803,300 | 354,300 |
| % Change | | 21.4% | | 1.6% | | 3.4% |
| Professional Services | 509,600 | 934,600 | 1,190,600 | 256,000 | 1,161,600 | (29,000) |
| Outside Services - Non Professional / Mainte | 3,047,900 | 4,782,100 | 3,919,100 | (863,000) | 4,149,200 | 230,100 |
| Rent & Leases | 1,025,100 | 950,900 | 1,120,900 | 170,000 | 1,138,900 | 18,000 |
| Repairs & Maintenance - Outside Services | 901,000 | 3,311,200 | 4,607,500 | 1,296,300 | 3,492,000 | (1,115,500) |
| Taxes & Permits | 4,984,100 | 5,796,000 | 6,175,600 | 379,600 | 6,346,700 | 171,100 |
| Utilities Charges | 1,291,500 | 1,464,800 | 1,473,500 | 8,700 | 1,548,800 | 75,300 |
| Other Accounts | 1,079,900 | 922,200 | 1,617,200 | 695,000 | 1,237,700 | (379,500) |
| Total O&M | 21,312,800 | 28,447,100 | 30,553,400 | 2,106,300 | 29,878,200 | (675,200) |
| % Change | | 33.5% | | 7.4% | | (2.2%) |
| Operating Equipment | 227,700 | — | 99,600 | 99,600 | 21,000 | (78,600) |
| Total O&M and Operating Equipment | 21,540,500 | 28,447,100 | 30,653,000 | 2,205,900 | 29,899,200 | (753,800) |
| % Change | | 32.1% | | 7.8% | | (2.5%) |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE



FY 2021/22 BUDGET BY EXPENDITURE



PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Regular | Total | 41 | 51 | 50 | (1) | 50 | — |
| | O&M | 39 | 50 | 43 | (8) | 43 | — |
| | Capital | 2 | 1 | 8 | 7 | 8 | — |
| Temporary | Total | 3 | 1 | 9 | 8 | 7 | (2) |
| | O&M | 3 | 1 | 7 | 6 | 5 | (2) |
| | Capital | 1 | — | 2 | 2 | 2 | — |
| Total Personnel | Total | 44 | 52 | 59 | 7 | 57 | (2) |
| | O&M | 41 | 51 | 49 | (2) | 47 | (2) |
| | Capital | 3 | 1 | 10 | 9 | 10 | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

Real Property's O&M and Operating Equipment Biennial Budget is \$30.7 million in FY 2020/21 and \$29.9 million in FY 2021/22 or an increase of 7.8% and a decrease of 2.5%, respectively from the prior budget years. The main factors affecting these changes:

- Expanded responsibilities for the group, including the management, maintenance and construction of Employee District Housing throughout the service area.
- Large maintenance and repair projects at Metropolitan's USHQ Facility, DVL Visitor Center and Recreation Area, and property structures in the Bay Delta and Palo Verde Valley.
- Significant efforts related to encroachment remediation, appraisal and marketing of surplus properties, and office relocation services during the Union Station Headquarters Improvement Project.

The following are the significant changes by budget year:

FY 2020/21

Personnel-Related Issues

Total personnel count is decreasing by one regular full time position and increasing by eight district temporary positions from the FY 2019/20 budget. The increase in district temporary labor is necessary to support critical district housing projects, management of Bay Delta and Palo Verde property structures, land protection projects, and the encroachment remediation projects.

Capital labor allocation reflects a significant increase in FY 2020/21 in order to support such projects as the Employee Village Enhancements in the desert, Union Station Headquarters Improvement Project, USHQ Fire Alarm Replacement, support to Engineering for the

Prestressed Concrete Cylinder Pipeline Rehabilitation, Right of Way and Infrastructure Protection, and the Enterprise Content Management projects.

Salaries and benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The budget reflects an increase in professional consulting services anticipated for the implementation of a new property management database, as well as examination of the impacts and opportunities associated with the Release of Federal Reversionary Lands Act of June 18, 1932 (47 Stat. 324, chapter 270). In addition,

consultants will be retained to complete a regenerative agricultural study in the Palo Verde Valley with California State University at Chico.

Non-Professional Services

The budget reflects a significant decrease from the FY 2019/20 budget which included a large portion of the costs for the temporary relocation of personnel and cubicle-workstations during the Union Station Headquarters Improvement Project.

Repairs and Maintenance - Outside Services

The budget reflects increased costs for repairs and maintenance at Headquarters, DVL Recreation and Visitors Center, Employee District Housing, and property structures in the Bay Delta and Palo Verde Valley.

Taxes & Permits

The budget reflects increases to annual property tax payments, as well as a one-time assessment from the Bay Delta Island Reclamation Districts for demolition of occupied and unoccupied structures in the Bay Delta.

Other

The budget reflects an increase due to one-time Expensed Equipment purchases for replacement of seating in the Board, replacement of chairs and tables in the committee rooms, cafeteria equipment and equipment for the USHQ Wellness Center.

FY 2021/22

Personnel-Related Issues

Total personnel count is decreasing by two district temporary positions from the FY 2020/21 budget. This decrease reflects the completion of temporary work assignments.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Non-Professional Services

The budget reflects an increase due to contract price escalations, including contracts for janitorial and building engineering services.

Repairs and Maintenance - Outside Services

The budget reflects a reduction from FY 2020/21 due to the completion of one-time repairs, reduction in the movers necessary for the Union Station Headquarters Improvement Project, and completion of a three-year paving project at the DVL recreation facilities and Visitor's Center.

Other

The budget reflects a decrease due to one-time furniture purchases for Board and Committee rooms in the FY 2020/21.

Operating Equipment - FY 2020/21 and FY 2021/22

The operating equipment budget reflects an increase in FY 2020/21 due to the replacement of commercial equipment in the USHQ Wellness Center that has reached end-of-life, a CAD plotter, and a vehicle (truck) for an ongoing California Fish & Wildlife Service contract at DVL.

This page intentionally left blank.

OFFICE OF CHIEF FINANCIAL OFFICER

The Office of the Chief Financial Officer (CFO) provides innovative, proactive, and strategic financial direction in support of the mission of Metropolitan, the Board of Directors, management, and employees.

PROGRAMS

The Office of the Chief Financial Officer is responsible for maintaining Metropolitan's strong financial position and high credit ratings and helping to achieve equitable water rates and charges that generate sufficient revenues.

In addition, the Office of the CFO assists in the efficient management of Metropolitan's financial resources, and ensures that adequate financial controls are in place to accurately record financial transactions, communicate financial results, and protect Metropolitan's assets.

The Office of the CFO accomplishes its mission through the following programs or sections:

Chief Financial Officer is responsible for the overall administration of finance and accounting functions for Metropolitan including debt and investment management; financial planning and analysis including rate setting and budgeting; accounting and control including financial reporting, payroll, accounts payable, accounts receivable; and risk management and business continuity.

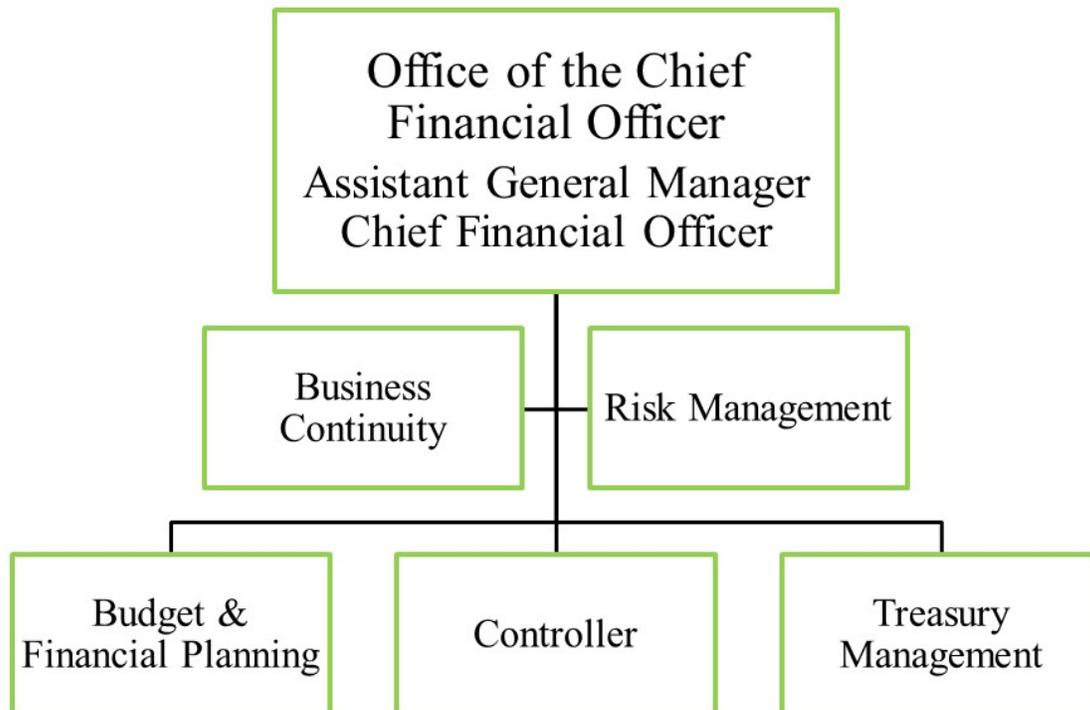
Business Continuity Management Program ensures that Metropolitan productively identifies potential business impacts and implements recovery strategies to continue critical operations in the event of an emergency or other business disruption. This is accomplished by conducting Business Impact Analyses and developing business continuity plans along with a life cycle of ongoing plan maintenance, testing, training and awareness. In addition, emergency communications are spearheaded using the MetAlert mass notification system.

Risk Management reports directly to the Chief Financial Officer section, is responsible for managing all aspects of Metropolitan's casualty insurance and risk management programs to minimize exposure to loss; access risk and recommend strategies to minimize or transfer contract risk on all Metropolitan and agreements, and procure excess and specialty insurance policies to supplement the self-insured property and liability claims program.

Budget and Financial Planning is responsible for Metropolitan's Biennial Budget, revenue requirements, and rates and charges recommendations; cost monitoring and analysis; short and long term financial analysis; planning and financial modeling; the water standby charge program; and the annual tax levy and annexation fee calculations.

Controller is responsible for maintaining internal controls that safeguard Metropolitan's assets, as well as recording and maintaining its official accounting records via the billing, accounts payable, payroll, and financial reporting functions.

Treasury/Debt Management is responsible for Metropolitan's investment and treasury obligations including receipt, safekeeping, and disbursement of Metropolitan's funds; preparation of security sales documents; and all commercial banking activities, including receipts and payment processing, such as wires, checks, and automatic deposits; and administration of debt obligations including all issuance of bonds, and investor and bond rating agency relations.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, the Office of the CFO will focus on the following key issues:

Cost of Service and Budget

Complete the biennial cost-of-service analysis for rates and charges. Complete and implement the Biennial Budget.

Financial Forecasts and Analysis

Provide an updated Ten-Year Financial Forecast in the Biennial Budget.

Continue to provide the Board with various analyses to manage financial performance for long-term rate stability, given the future potential implementation of the Delta conveyance and the Regional Recycled Water Program.

Analyze the funding of financial initiatives as identified.

Annexation/Tax Levy

Complete the annual annexation calculation and tax levy assessment.

Rates and Charges

Manage and effectively administer rates and charges to recover costs consistent with Board policy and objectives. Complete a comprehensive rate restructuring study.

Financial Reporting/Internal Controls

Continue to record and report the financial activities of Metropolitan in a timely and transparent manner to the Board and member agencies.

Continue to ensure that internal controls are in place to provide assurance that assets are safeguarded and financial information is fairly stated.

Continue to improve communications of financial information to the Board, member agencies, management, and the financial community.

Continue to improve communications of financial information to the Board, member agencies, management, and the financial community.

Capital Financing

Update capital financing plans and work with rating agencies and investors to communicate financial needs and capabilities, ensure cost-effective access to capital markets, and maintain long-term bond ratings of AA or better.

Work with Metropolitan's underwriting team, financial advisors, and swap advisors to identify financing opportunities to prudently manage the overall cost of financing Metropolitan's capital investment program.

Manage investor relations to ensure clear communications, accuracy of information, and integrity.

Continue to manage debt service to mitigate the volatility of debt service payments over time and reduce debt service costs through re-financings and the prudent use of interest rate swaps, in accordance with Metropolitan's interest rate swap policy.

Maintain relationships with the financial community and bond rating agencies to maintain Metropolitan's high credit ratings and access to various aspects of the financial markets to maximize financial flexibility.

Investment

Prudently invest Metropolitan's funds with the objective of safety of principal, liquidity, and yield.

Manage the short term portfolio to provide the necessary liquidity to fund in excess of \$3.0 billion over the biennium in expenditures for Operations and Maintenance, debt service, and construction projects.

Measure the performance of the short-term portfolio, and manage the portfolio to meet or exceed the short-term benchmark consistent within established investment codes and policy.

Manage outside portfolio managers to ensure compliance with Metropolitan's investment policy, and to monitor investment activity performance.

Risk Management

Continue to effectively manage Metropolitan's casualty insurance and risk management programs to minimize exposure to loss.

Business Continuity

Continue to refine the Business Continuity Plan template and Fusion system to capture better information and produce actionable and easy to follow recovery plans.

Collaborate with the business users to perform annual plan updates and approvals using Fusion software.

Conduct biannual application recovery exercises will be with the business users to ensure accessibility, data integrity, and functionality of critical applications and data as indicated in the Business Impact Analysis (BIA). Information Technology is enhancing the disaster recovery infrastructure at the Lake Mathews backup data center that will provide a robust and safe test environment for the business users.

Conduct tabletop exercises for Metropolitan's business continuity plan to validate recovery strategies and identify areas in need of updating.

Test emergency communications using MetAlert (the MIR3 mass notification system) on a regular frequency to all employees as well as the Board to ensure effective communications in the event normal methods are impacted.

Workforce Development & Succession Planning

Continue to examine and consider the challenges associated with succession planning and future staffing requirements in light of the composition and age of the workforce.

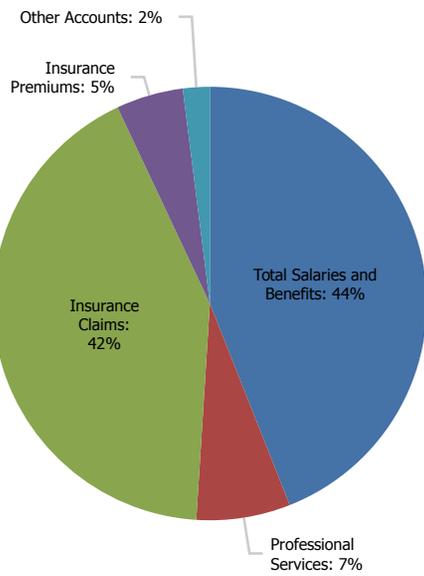
Work with each section within the Office of the CFO to establish staff back-up responsibilities for various work processes.

O&M FINANCIAL SUMMARY

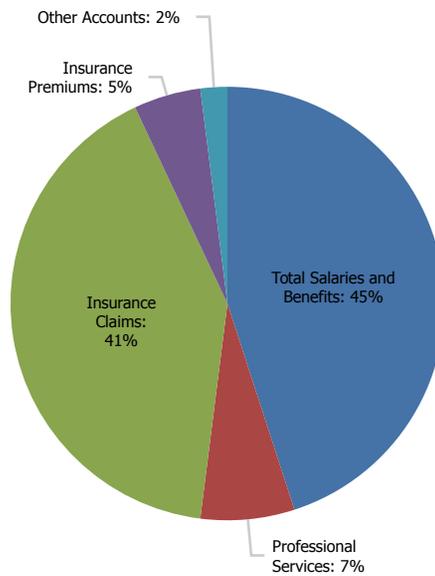
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Total Salaries and Benefits | 7,892,500 | 10,763,100 | 12,858,800 | 2,095,700 | 13,104,600 | 245,800 |
| Direct Charges to Capital | (61,200) | — | (626,800) | (626,800) | (203,000) | 423,800 |
| Total Salaries and Benefits | 7,831,300 | 10,763,100 | 12,232,000 | 1,468,900 | 12,901,600 | 669,600 |
| % Change | | 37.4% | | 13.6% | | 5.5% |
| Professional Services | 1,298,300 | 1,076,600 | 2,084,900 | 1,008,300 | 2,061,100 | (23,800) |
| Insurance Claims | 714,100 | 11,547,600 | 11,733,000 | 185,400 | 11,920,000 | 187,000 |
| Insurance Premiums | 1,283,800 | 1,300,000 | 1,450,000 | 150,000 | 1,500,000 | 50,000 |
| Other Accounts | 320,800 | 510,900 | 449,300 | (61,600) | 450,600 | 1,300 |
| Total O&M | 11,448,300 | 25,198,200 | 27,949,200 | 2,751,000 | 28,833,300 | 884,100 |
| % Change | | 120.1% | | 10.9% | | 3.2% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE

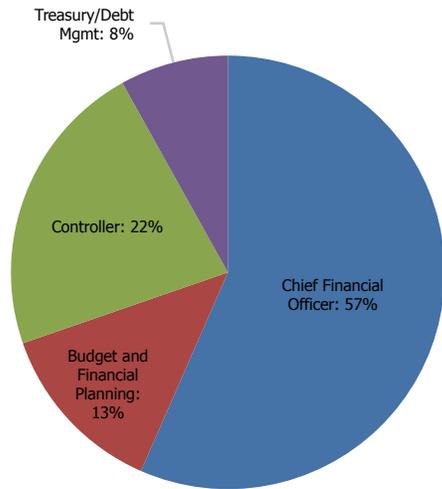


FY 2021/22 Budget by Expenditure

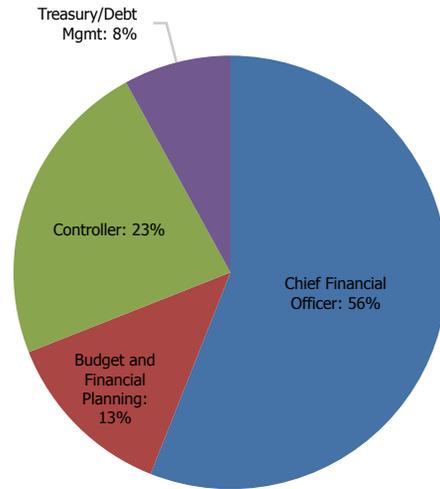


O&M BUDGET BY SECTION

FY 2020/21 BUDGET BY SECTION



FY 2021/22 BUDGET BY SECTION



| | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 | Personnel Budget | | |
|-------------------------------|-------------------|-------------------|---------------------|-------------------|---------------------|------------------|-----------|-----------|
| | | | | | | 19/20 | 20/21 | 21/22 |
| Chief Financial Officer | 14,847,600 | 15,710,600 | 863,000 | 16,064,200 | 353,600 | 6 | 8 | 8 |
| Budget and Financial Planning | 2,822,600 | 3,661,700 | 839,100 | 3,716,800 | 55,100 | 10 | 11 | 11 |
| Controller | 5,487,800 | 6,265,200 | 777,400 | 6,682,000 | 416,800 | 28 | 31 | 31 |
| Treasury/Debt Mgmt | 2,040,100 | 2,311,700 | 271,600 | 2,370,300 | 58,600 | 5 | 5 | 5 |
| Total O&M | 25,198,100 | 27,949,200 | 2,751,000 | 28,833,200 | 884,100 | 49 | 55 | 55 |

Totals may not foot due to rounding.

PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|----------------|----------------|----------------|---------------------|----------------|---------------------|
| Regular | Total | 46 | 49 | 51 | 2 | 51 | — |
| | O&M | 46 | 49 | 51 | 2 | 51 | — |
| | Capital | — | — | — | — | — | — |
| Temporary | Total | 2 | — | 4 | 4 | 4 | — |
| | O&M | 2 | — | 4 | 4 | 4 | — |
| | Capital | — | — | — | — | — | — |
| Total Personnel | Total | 48 | 49 | 55 | 6 | 55 | — |
| | O&M | 48 | 49 | 55 | 6 | 55 | — |
| | Capital | — | — | — | — | — | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

The Office of the CFO's O&M Biennial Budget is \$27.9 million in FY 2020/21 and \$28.8 million in FY 2021/22 or an increase of 10.9% and an increase of 3.2% respectively from the prior budget years.

The change is primarily due to the following factors:

- Staffing was increased in the Rates & Charges unit to manage the development of the critical biennial rate setting and cost of service processes including the ten year financial forecast, and also to support the Payroll process and accurate and timely reporting of compensation to CalPERS.
- Temporary labor increase to support increased reporting workload due to new government accounting and reporting standards as well as reporting for Delta Conveyance Authority (DCA), Delta Conveyance Finance Authority (DCFA), Six Agency Committee, Colorado River Board and other agencies; accurate payroll processing and reporting to CalPERS; and critical business systems such as water billing, payroll and budget.
- The increase in professional services is primarily due to a new rate restructuring study to be undertaken over the biennium. The other increases are for investment management services, and critical audits or studies related to internal controls, bond accounting, Government Accounting Standards (GASB) implementation, and critical business systems.

The following are the significant changes by budget year.

FY 2020/21

Personnel–Related issues

Total personnel count is increasing by 2 regular full time positions and 4 district temporary positions from the FY 2019/20 budget.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

Accounting for the realignment of some of the budget from memberships and subscriptions to professional services, the budget for professional is increasing by about \$800K. Over 60% of this increase is related to a new rate restructuring study to be undertaken over the biennium. The remaining increase is for investment management services to support Metropolitan's \$600 million investment portfolio, and for critical audits and studies related to accounting, reporting and business systems.

Insurance Premiums

The insurance premiums budget is increasing as a result of the expected overall pool exposure to catastrophic losses such as wild fire risk liability, US economic and political uncertainties, global instability and new and increased exposures due in part to climate change.

Insurance Claims

Third party liability claims budget is increasing based on projected losses from the actuarial report.

FY 2021/22

Personnel–Related issues

Total personnel count remains flat from the FY 2020/21 budget.

Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Professional Services

The professional services budget is decreasing primarily as the result of the completion of the rate restructuring study before the end of the year.

Insurance Premiums

The insurance premiums budget is increasing as a result of the expected overall pool exposure to catastrophic losses.

Insurance Claims

Third party liability claims budget is increasing based on projected losses from the actuarial report.

This page intentionally left blank.

EXTERNAL AFFAIRS

External Affairs builds awareness and support for Metropolitan's mission and programs by directing media and stakeholder communications, public outreach and education projects, legislative activities, business outreach and innovation programs, and member agency support services.

PROGRAMS

External Affairs is responsible for advancing Metropolitan's policy objectives and communicating with large and diverse audiences on behalf of the district. A strong portfolio of communication tools, public outreach and sponsorship programs, education, legislative and innovation activities is used to build positive working relationships and increase awareness of Metropolitan's programs and initiatives with the public, news media, legislators, regulators, educators, community groups, businesses, labor organizations, Metropolitan's public member agencies and other stakeholders.

Staff at the Union Station headquarters office and regional representatives give voice to Metropolitan's policy priorities and projects throughout Southern California. External Affairs also manages strategic activities and regional outreach in Metropolitan's offices in Sacramento, Washington, D.C. and San Diego.

Office of Group Manager directs the activities of Business Outreach, Conservation and Community Services, Legislative Services, Media Services and the Member Services and Public Outreach sections, and the Business Management team. The Group Manager provides strategic leadership to communicate policy objectives and program initiatives in coordination with the board, executive management and other groups within the organization.

Business Outreach Team actively encourages the participation of small, locally-owned, women-owned, minority-owned, disabled veteran-owned and economically disadvantaged business enterprises, and facilitates business in the solicitation and procurement of construction

contracts, professional services agreements, equipment and other materials and supplies. Through participation and collaboration with companies, entrepreneurs, innovation hubs and other agencies, the Business Outreach section enhances involvement in new technologies and positions Metropolitan as an international leader in water innovation.

Legislative Services promotes and protects the interests of Metropolitan and its member agencies before executive, legislative, and regulatory agencies of the state and federal governments. The section advances Metropolitan's policy objectives and board-adopted legislative priorities with legislators and other water policymakers, and supports an effective and growing outreach program with member agencies and stakeholders to mobilize and sustain support for Metropolitan's key initiatives.

Conservation and Community Services advances public awareness of Metropolitan and important water and conservation issues through advertising, education and community outreach. The section promotes and helps market conservation programs and activities, and manages Metropolitan's sponsorships for education and research programs, water forums, events and community partnerships.

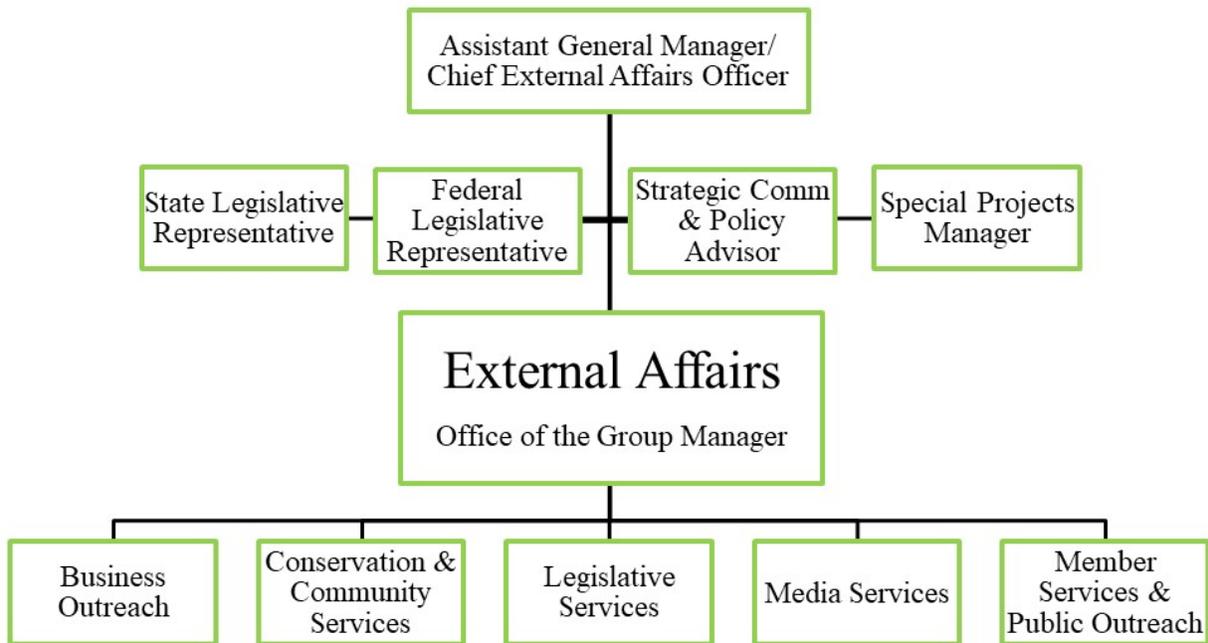
The Education Unit supports standards-based water education curriculum and works with educational associations, institutions and teachers to provide water education resources for elementary and secondary schools, colleges and universities. The unit hosts the annual Solar Cup competition.

Member Services and Public Outreach

provides support services to Metropolitan’s member agencies and manages outreach efforts for Metropolitan’s facility operations, construction activities and other water resource initiatives. The section works with and supports local government, business, agriculture and community organizations, and directs research efforts to support Metropolitan programs. This section recently partnered with the Sanitation Districts of Los Angeles County on the construction of the Regional Recycled Water Advanced Purification Center, which is now operational at the Joint Water Pollution Control Plant in Carson. Staff conducts site tours of the new 500- gallon-per-day facility.

The Inspection Trip Team conducts board-sponsored field inspections of Metropolitan and related facilities to educate and inform business and community leaders with firsthand knowledge of Metropolitan’s operations.

Media Services develops, coordinates and communicates messages, information and achievements to support Metropolitan’s key objectives and programs. The section is responsible for media inquiries, press releases and conferences, informational resources including fact sheets, talking points, brochures and opinion pieces and videos, and managing Metropolitan’s websites, e-newsletters, blogs and a growing presence on social media platforms and digital platforms.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, External Affairs will focus on the following key issues and objectives:

Communications and Outreach Efforts

Expand and continue to improve the use of strategic, impactful and creative communication plans and programs to inform the public, businesses, environmental and other stakeholder groups about Metropolitan's initiatives and leadership to ensure safe, reliable and sustainable water supplies now and into the future.

Update content and informational resources on the newly redesigned mwdh2o.com website, manage development of redesigned microsites as needed to improve the functionality, content management, security and end-user experience.

Develop in-house management of social media outreach and marketing activities, search engine optimization and marketing functions to meet business and outreach goals.

Strengthen the capacity of sponsorship and partnership programs, including the Community Partnering Program, legislative sponsorships and memberships, and business outreach sponsorships, to enhance information-sharing on water issues and stewardship and relationships with non-governmental organizations, business groups, local elected officials, community organizations and other stakeholder groups throughout Southern California.

Engage in research and related activities that provide accurate and timely information on public opinions, consumer attitudes and awareness to inform future outreach activities with member agencies, stakeholders and the public.

Water Supply Reliability, Conservation and Sustainability

Develop and implement an effective and well-managed multimedia, multilingual advertising and outreach campaign to increase public awareness of water supply conditions, Metropolitan and member agency rebate programs, and support for long-term conservation strategies.

Provide communication support for Metropolitan programs, planning activities and projects that ensure water supply reliability, including existing water operations, imported supplies from the Colorado River and State Water Project, the Integrated Resource Plan and local resource programs that diversify the region's water portfolio, conservation actions and innovative water technologies.

Increase awareness of Metropolitan's long-standing efforts to promote environmental stewardship through actions and investments for projects, programs, research and collaborative activities that promote the use of native plants, protect and enhance habitat and ecosystems, watersheds, and water quality.

Promote public awareness of climate change impacts on water supply conditions and reliability using a range of community and outreach tools to support Metropolitan's current and future initiatives, including the Climate Action Plan.

Bay-Delta and Local Supply Initiatives

Provide information and secure support of stakeholders, the public and legislators for Metropolitan's positions on policies that promote water supply reliability and an environmentally sustainable Bay-Delta. This includes programs and policies related to Delta conveyance, EcoRestore and Metropolitan-owned properties and science investments in the Delta.

Ensure strong coordination and consistent messaging with state and federal agencies, State Water Contractors, JPA participating agencies, and member agencies on activities related to Delta conveyance.

Provide communication and community outreach to increase public awareness of and support for new and proposed projects to advance local supply development, including the Regional Recycled Water Advanced Purification Center.

Legislative Policy Objectives

Work with the board, member agencies and executive management to secure support for and/or sponsorship of federal and state legislation and regulatory policies that advance Metropolitan's policy objectives, including strategic water quality and supply initiatives, conservation, Delta solutions, regional water resources projects, and sustainable water and energy management.

Conduct briefings, presentations and tours for elected officials and government leaders, and community-based environmental and business organizations to increase understanding of key water infrastructure systems and investments and key legislative and regulatory policies.

Board and Member Agency Support

Facilitate ongoing communication and coordination between Metropolitan and its member agencies through regular meetings with general managers, legislative and education coordinators, and public information officers.

Effectively manage the inspection trip program in coordination with the Board to educate the public, business and community leaders, elected officials, news media, members of the public about Metropolitan and encourage a dialogue about the state's water supply and infrastructure, environmental issues and climate change impacts, agriculture and urban water interface and future challenges.

Provide primary support to the Board's Communications and Legislation Committee, the Agriculture and Industry Relations Committee, and the ad hoc Facilities Naming Committee, ensuring that committee presentations, board letters and associated activities provide timely, accurate and relevant information on programs, trends and activities to help inform board actions and ensure transparency.

Business Outreach

Maintain an effective Business Outreach program for regional small businesses and veterans to ensure broad participation while achieving board-adopted goals of 25 percent or better for contracting dollars to small business and 3 percent to disabled veteran-owned enterprises.

Partner with member agencies in hosting "Connect 2 Met/Connect 2 Vet" and other business opportunity forums to educate local businesses on how to conduct business with public agencies and their purchasing departments.

Provide leadership and collaborate with member agencies, other public agencies and innovation programs to identify, develop and promote emerging water technologies.

Educational Programs

Update and expand distribution of Metropolitan's K-12 water education materials in the areas of science, math, language arts and social studies.

In coordination with member agencies and the educational community, explore opportunities to expand educational services through the use of new technologies to reach more students, teachers and classrooms, including underserved and culturally diverse populations.

Support and manage Metropolitan's unique educational programs, including water education grants and sponsorship opportunities, the annual Solar Cup competition, and the annual Student Art Contest.

Emergency Management and Crisis Communication

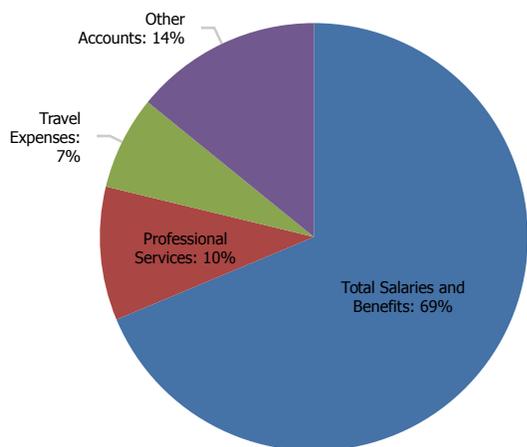
Support Metropolitan's emergency preparedness with a responsive crisis communications plan, well-trained staff, and the use of social media and other communications technologies to provide essential services during times of emergency and in response to disasters.

O&M FINANCIAL SUMMARY

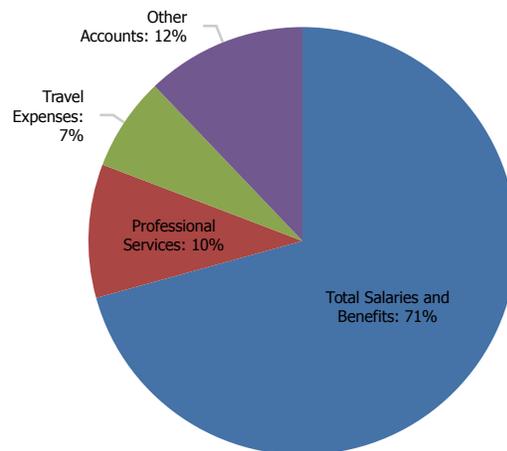
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|--|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Total Salaries and Benefits | 16,868,800 | 17,907,700 | 18,994,100 | 1,086,400 | 20,100,600 | 1,106,500 |
| Direct Charges to Capital | (164,800) | — | — | — | — | — |
| Total Salaries and Benefits | 16,704,000 | 17,907,700 | 18,994,100 | 1,086,400 | 20,100,600 | 1,106,500 |
| % Change | | 7.2% | | 6.1% | | 5.8% |
| Professional Services | 2,314,900 | 2,944,300 | 2,824,500 | (119,800) | 2,825,800 | 1,300 |
| Advertising | 423,000 | 1,320,800 | 610,000 | (710,800) | 610,000 | — |
| Community Outreach Activities | 329,000 | 400,000 | 400,000 | — | 400,000 | — |
| Materials & Supplies | 320,200 | 275,700 | 319,200 | 43,500 | 317,000 | (2,200) |
| Memberships & Subscriptions | 484,400 | 577,100 | 704,900 | 127,800 | 703,400 | (1,500) |
| Outside Services - Non Professional / Mainte | 960,500 | 1,055,200 | 806,000 | (249,200) | 685,400 | (120,600) |
| Sponsorships | 563,700 | 659,300 | 655,500 | (3,800) | 664,000 | 8,500 |
| Travel Expenses | 1,475,500 | 1,831,400 | 1,966,500 | 135,100 | 1,966,500 | — |
| Other Accounts | 486,900 | 605,400 | 586,400 | (19,000) | 585,700 | (700) |
| Total O&M | 24,062,100 | 27,576,900 | 27,867,100 | 290,200 | 28,858,400 | 991,300 |
| % Change | | — | | — | | — |
| Operating Equipment | 30,400 | 32,300 | — | (32,300) | — | — |
| Total O&M and Operating Equipment | 24,092,500 | 27,609,200 | 27,867,100 | 257,900 | 28,858,400 | 991,300 |
| % Change | | 14.6% | | 0.9% | | 3.6% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE

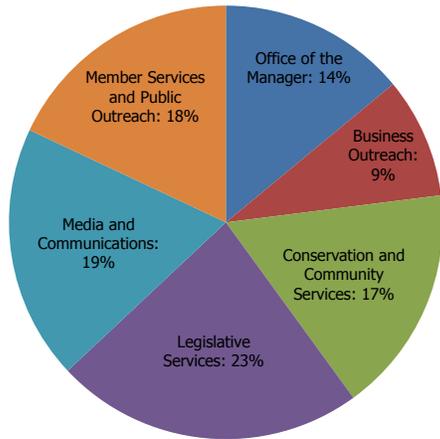


FY 2021/22 BUDGET BY EXPENDITURE

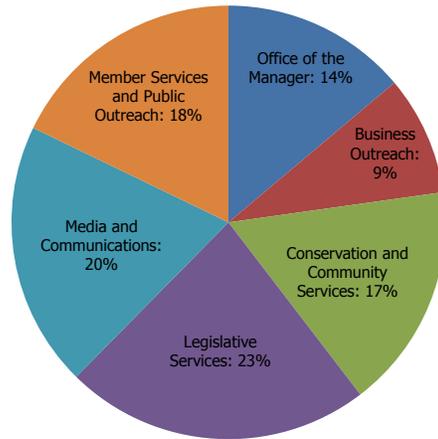


O&M BUDGET BY SECTION

FY 2020/21 BUDGET BY SECTION



FY 2021/22 BUDGET BY SECTION



| | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 | Personnel Budget | | |
|-------------------------------------|-------------------|-------------------|---------------------|-------------------|---------------------|------------------|-----------|-----------|
| | | | | | | 19/20 | 20/21 | 21/22 |
| Office of the Manager | 3,314,800 | 3,926,300 | 611,500 | 4,094,600 | 168,300 | 9 | 10 | 10 |
| Business Outreach | 2,421,400 | 2,383,600 | (37,700) | 2,502,100 | 118,500 | 7 | 7 | 7 |
| Conservation and Community Services | 5,275,400 | 4,870,500 | (404,800) | 4,929,500 | 59,000 | 11 | 11 | 11 |
| Legislative Services | 6,351,900 | 6,369,400 | 17,500 | 6,590,800 | 221,400 | 14 | 13 | 13 |
| Media and Communications | 5,689,500 | 5,382,700 | (306,800) | 5,649,700 | 267,000 | 19 | 20 | 20 |
| Member Services and Public Outreach | 4,524,200 | 4,934,700 | 410,500 | 5,091,600 | 156,900 | 10 | 11 | 11 |
| Total O&M | 27,577,000 | 27,867,100 | 290,200 | 28,858,300 | 991,100 | 70 | 72 | 72 |

Totals may not foot due to rounding.

PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|----------------|----------------|----------------|---------------------|----------------|---------------------|
| Regular | Total | 69 | 70 | 72 | 2 | 72 | — |
| | O&M | 68 | 70 | 72 | 2 | 72 | — |
| | Capital | 1 | — | — | — | — | — |
| Temporary | Total | 1 | — | — | — | — | — |
| | O&M | 1 | — | — | — | — | — |
| | Capital | — | — | — | — | — | — |
| Total Personnel | Total | 70 | 70 | 72 | 2 | 72 | — |
| | O&M | 70 | 70 | 72 | 2 | 72 | — |
| | Capital | 1 | — | — | — | — | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

External Affairs' O&M and Operating Equipment Biennial Budget is \$27.9 million in FY 2020/21 and \$28.9 million in FY 2021/22 or an increase of 0.9% and an increase of 3.6%, respectively from the prior budget years, due to increased costs for salaries and benefits.

In an effort to achieve budget savings for non-labor activities, the plan incorporates new efficiencies for communication and outreach activities while maintaining strong support for Metropolitan's program, business and strategic priorities.

- **Advertising:** In FY 2018/19, the board authorized \$14.7 million for a three-year multi-media multilingual advertisement campaign to fully engage Southern Californians in making conservation a way of life. The campaign was funded, developed and implemented in coordination with WRM. It leveraged research, new messaging and creative concepts, and optimization to target consumers and more effectively reach disadvantaged communities. In FY 2020/21, spending for the advertising consultant contract will be reduced from the planned \$3 million to \$1.5 million, and the use of in-house resources for video services, design, social media marketing and member agency partnerships will be expanded to continue a successful outreach and marketing effort to promote rebates, native plants and water use efficiency.
- **Projects and Community Outreach:** External Affairs will continue to provide a full range of communications and public outreach support for capital projects and other major initiatives to promote water supply reliability and sustainability. These include a Delta conveyance project, the Regional Recycled Water Advanced Purification Center, the Integrated Resources Plan, climate change and refurbishment of existing infrastructure such as Colorado River, Second Lower Feeder, and other rehabilitation projects.
- **Online Strategic Initiatives:** A redesign of the mwdh2o.com website and project-specific microsites is scheduled for completion during FY 2020/21. This is being managed in collaboration with IT, and funding is administered by CIP. Recognizing the growing value of social media to communicate with broad and diverse audiences, new efforts will use Metropolitan's social media platforms to convey day-to-day activities and messaging on projects, initiatives and actions in a compelling and engaging format.
- **Board Outreach Support:** Resources are provided to support outreach activities by the Chairwoman and Metropolitan's Board, including inspection trips, communication activities, participation at conferences and community events, media training, coordination with member agencies for education, communication and legislative services, and logistical support.

The following are the significant changes by budget year:

FY 2020/21

Personnel-Related Issues

The budget for Salary and Benefits reflect negotiated labor increases and merit increases for qualified employees that will be offset by anticipated vacancies from retirements in the biennial period. In FY 2018/19, one position was reassigned to the Delta Conveyance Authority and was subsequently backfilled. Additionally, one position was transferred out of External Affairs to Administrative Services. In FY 2019/20, one additional regular position was added to provide

support for capital projects outreach and communications as part of succession planning in the Member Services and Public Outreach Section.

Other

The FY 2020/21 and FY 2021/22, budgets reflect reductions from the FY 2018/19 and FY 2019/20 budgets in the advertising, professional services and non-professional services accounts, as a result of the website redesign being reallocated to the capital budget. These changes have been carefully evaluated to ensure External Affairs will have the resources to carry out its core mission and objectives in these areas effectively and efficiently.

The budget maintains funding levels to support Board and General Manager initiatives and priorities for website and electronic media enhancements, community outreach efforts, and research-related professional and non-professional services. The budget also directs funding within the External Affairs budget for new research and related activities that provide accurate and timely information on public opinions and awareness to help inform future outreach activities; business outreach, new technology-based education projects, enhanced legislative support in the region and stakeholder outreach.

Operating Equipment

The budget reflects no operating equipment requests for FY 2020/21.

FY 2021/22

Personnel-related Issues

Total personnel count remains flat with the FY 2020/21 budget. Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.

Operating Equipment

The budget reflects no operating equipment requests for FY 2021/22.

GENERAL COUNSEL DEPARTMENT

The Legal Department provides a full range of legal services in a professional, timely, cost-effective, and creative manner.

GOALS AND OBJECTIVES

The role of the Office of the General Counsel is to support the priorities established by the Board of Directors and the General Manager. The goal of the Legal Department is to provide a full range of legal services in a professional, timely, cost-effective and creative manner that minimizes risk to Metropolitan.

PROGRAMS

The General Counsel is the chief legal spokesperson for Metropolitan and the Board of Directors and oversees the Legal Department's administrative functions.

The General Counsel represents Metropolitan in litigation and other proceedings to which Metropolitan is a party; provides legal advice to the Board, its committees, and to Metropolitan's staff; drafts, reviews, and negotiates contracts, documents, and other agreements; consults with representatives of other public and private entities on matters of mutual concern; monitors and analyzes pending and enacted legislations and, when appropriate, drafts legislative recommendations.

The Office of the General Counsel provides legal services to the Board, its committees, and to Metropolitan staff in the following areas:

- Represents Metropolitan's interests relating to water supply matters, including Bay Delta resources, Colorado River supplies, the State Water Contract (SWC) and the State Water Project (SWP) groundwater and water transfer issues, California Environmental Quality Act (CEQA), Endangered Species Act and other environmental issues, energy issues, water delivery and treatment, and worker safety.
- Represents Metropolitan's interests with regard to claims and litigation by or against Metropolitan.
- Provides legal advice with respect to the acquisition, management, and disposal of Metropolitan property and the administration of annexations, and provides legal assistance in Metropolitan's procurement and construction contract programs.
- Provides legal advice with respect to Metropolitan's financial activities, including Metropolitan's rates and charges, taxation, disclosure and bond issuance, legality of investments, and fiscal administration.
- Provides legal advice and assistance related to labor and personnel matters.
- Reviews, analyzes, and monitors pending state and federal legislation and drafts legislative recommendations.

In FY 2020/21 and FY 2021/22, the Office of the General Counsel will focus on the following key issues:

Water Supply Reliability

Pursue a comprehensive legal strategy that proactively addresses legal issues associated with the operation of the SWP and the related permits and environmental matters while vigorously asserting and defending Metropolitan's interest in litigation and administrative proceedings regarding the SWP.

Provide legal advice in support of the development and implementation of the anticipated Department of Water Resources (DWR) proposal to improve the Delta conveyance facilities including the associated environmental documentation, implementing agreements and litigation in a manner supportive of Metropolitan's goals and objectives.

Provide legal advice regarding permitting, implementation and financing, of any proposed improvements to the Delta conveyance facilities including agreements with DWR and other state water contractors.

Provide legal advice and support relative to the continuing litigation relating to the Delta Stewardship Council, Oroville litigation and other matters impacting Metropolitan. Provide legal advice and support for water transfers and exchanges and development of local resources, desalination and conservation projects and programs. Provide legal support for capital projects required to upgrade, repair and provide additional flexibility in the operation of Metropolitan's distribution system.

Provide legal advice and support for update and implementation of Metropolitan's Integrated Water Resources Plan Update and Urban Water Management Plan, including development of the Long-Term Conservation Plan.

Provide legal advice and support in connection with the extension and amendment of the SWC and preparation of supporting environmental documents under CEQA and any separate amendment of the SWC relating to the development and operation of new or additional conveyance facilities.

Continue to defend and enforce the terms of the Quantification Settlement Agreement and related agreements among the participating agencies and other agencies with Colorado River contracts.

Assist in developing, negotiating and documenting new water conservation and augmentation projects and implement the Drought Contingency Plan (DCP). Defend Metropolitan in litigation challenging the DCP.

Provide legal support for Metropolitan's efforts to protect and make optimal use of its Colorado River rights and related water transfer, storage, and exchange programs. Provide legal support for initiatives to identify and obtain new water supplies on the Colorado River, and to protect existing Colorado River water supplies against erosion by unlawful or unreasonable uses.

Finance

Provide legal advice regarding adoption of rates and charges. Continue to defend Metropolitan against challenges to its rate structure.

Provide legal advice and assist with amendments to existing bond resolutions and the development of a subordinate lien bond resolution.

Operations

Negotiate and prepare service connection agreements for new or modified member agency connections. Provide legal assistance on regulatory and real estate issues, including CEQA issues, arising from service connection requests.

District Governance

Continue to provide timely advice to the Board and committees on governance and legal compliance matters.

Serve as the point of contact and coordinate Metropolitan responses to Public Records Act requests.

Corporate Resources/District Infrastructure

Provide legal support for capital investment projects and repair and replacement plans, including professional services and procurement contracts.

Provide legal support for environmental analysis under CEQA of Metropolitan’s projects and other discretionary actions, in addition to analyzing potential environmental impacts of other agencies’ projects on Metropolitan properties and facilities.

Workforce/Human Resources

Provide proactive counsel, assistance and advice on workforce issues. Continue to defend Metropolitan in EEO and PERB matters, as well as grievance and disciplinary matters. Assist with investigations or engage third party investigators.

Represent Metropolitan in claims and litigation.

Real Property

Assist Real Property group in the negotiation and documentation of real property acquisitions and the surplusing of real property. Negotiate and provide legal support for the lease and licensing of Metropolitan property. Provide legal support for the grant and acceptance of easements and entry permits.

Represent Metropolitan in real property disputes including landlord tenant issues, condemnation and inverse condemnation issues and other matters.

Technology

Collaborate with Business Technology Group, External Affairs, and Human Resources on Information Governance Policies and the implementation of new technologies and protocols. Assist in educating the staff and Board in matters relating to technology and special media.

Energy Costs and Management

Assist with implementation of the Energy Management Plan, including providing advice on wholesale energy transactions, renewable energy projects and energy-related contracts and legislation.

Provide legal support to ensure that SWP energy needs are met in a cost-effective and sustainable manner.

Legal Department Administration

Continue to aggressively manage outside counsel costs, while obtaining effective representation to protect Metropolitan’s interests. Provide on-going training opportunities and develop and implement succession planning.

OFFICE OF THE GENERAL COUNSEL ORGANIZATION CHART

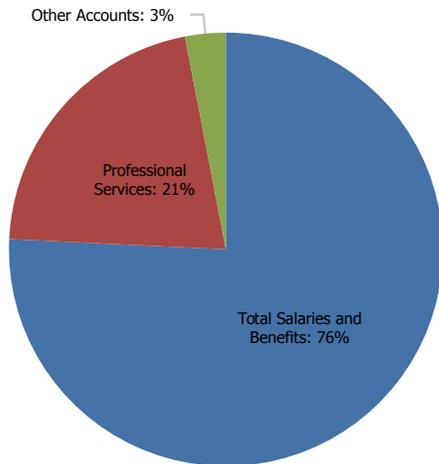


O&M FINANCIAL SUMMARY

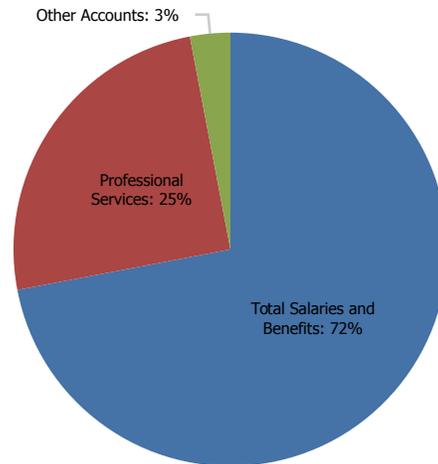
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|--|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Total Salaries and Benefits | 10,357,800 | 11,308,300 | 12,071,000 | 762,700 | 12,775,300 | 704,300 |
| <i>Direct Charges to Capital</i> | — | — | — | — | — | — |
| Total Salaries and Benefits | 10,357,800 | 11,308,300 | 12,071,000 | 762,700 | 12,775,300 | 704,300 |
| % Change | | 9.2% | | 6.7% | | 5.8% |
| Professional Services | 1,644,200 | 3,460,000 | 3,398,000 | (62,000) | 4,443,000 | 1,045,000 |
| Materials & Supplies | 25,400 | 55,000 | 170,000 | 115,000 | 170,000 | — |
| Memberships & Subscriptions | 111,000 | 110,000 | 110,000 | — | 110,000 | — |
| Outside Services - Non Professional / Mainte | 30,800 | 35,000 | 35,000 | — | 35,000 | — |
| Subsidies & Incentives | 55,100 | 55,000 | 55,000 | — | 55,000 | — |
| Travel Expenses | 59,100 | 120,000 | 120,000 | — | 120,000 | — |
| Other Accounts | 55,700 | 59,000 | 44,000 | (15,000) | 44,000 | — |
| Total O&M | 12,339,100 | 15,202,300 | 16,003,000 | 800,700 | 17,752,300 | 1,749,300 |
| % Change | | 23.2% | | 5.3% | | 10.9% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE



FY 2021/22 BUDGET BY EXPENDITURE



PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Regular | Total | 36 | 37 | 37 | — | 37 | — |
| | O&M | 36 | 37 | 37 | — | 37 | — |
| | Capital | — | — | — | — | — | — |
| Temporary | Total | 1 | 2 | 2 | — | 2 | — |
| | O&M | 1 | 2 | 2 | — | 2 | — |
| | Capital | — | — | — | — | — | — |
| Total Personnel | Total | 37 | 39 | 39 | — | 39 | — |
| | O&M | 37 | 39 | 39 | — | 39 | — |
| | Capital | — | — | — | — | — | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

The Office of the General Counsel’s Biennial Budget is \$16.0 million in FY 2020/21 and \$17.8 million in FY 2021/22 or an increase of 5.3% and an increase of 10.9% respectively from the prior budget years. The increase is primarily due to the following factors:

- Professional services costs increase reflects anticipated expenses for Bay Delta legal costs, water quality litigation, labor and employment issues, general litigation and other legal costs.
- Salaries and Benefits costs reflect negotiated labor increases and merit increases for qualified employees.

This page intentionally left blank.

GENERAL AUDITOR DEPARTMENT

The Audit Department provides independent, professional, and objective assurance and consulting services designed to add value to and improve Metropolitan's operations.

PROGRAMS

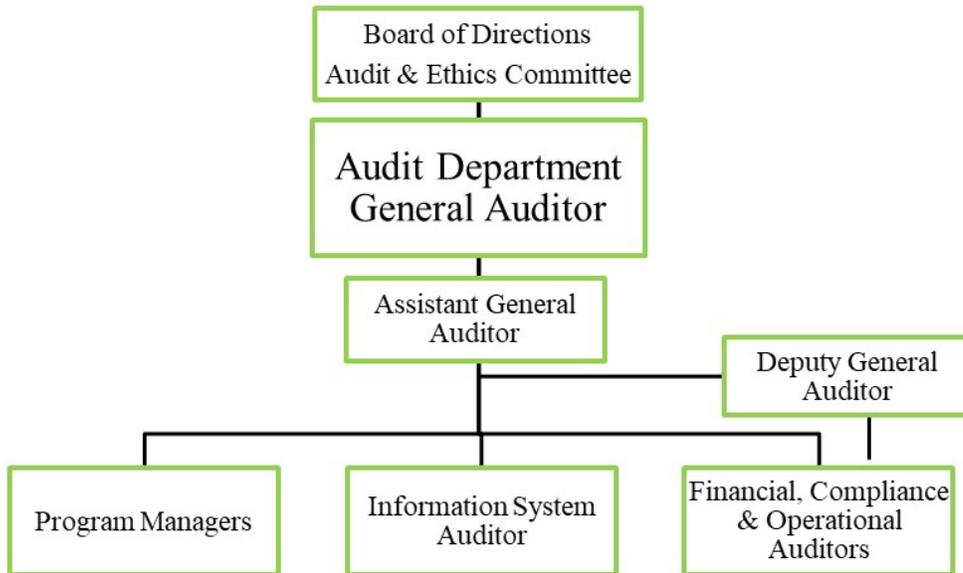
The Audit Department helps the organization accomplish its objectives by using a proactive, systematic approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

The scope of work of the Audit Department is to determine whether Metropolitan's network of risk management, internal control, and governance processes, as designed and represented by management, is adequate and functioning in a manner to ensure:

- Risks are appropriately identified, managed, and monitored.
- Significant financial, managerial, and operating information is accurate, reliable, and timely.

- Employees' actions are in compliance with policies, standards, procedures, and applicable laws and regulations.
- Resources are acquired economically, used efficiently and protected adequately.
- Programs, plans, and objectives are achieved.
- Quality and continuous improvement are fostered in the organization's control processes.
- Significant legislative or regulatory issues impacting the organization are recognized and addressed appropriately.

Opportunities for strengthening internal controls, improving efficiency, and protecting the organization's image may be identified during audits. These opportunities will be communicated to the appropriate level of management.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, the Audit Department will focus on the following key issues:

Risk Analysis, Risk Mitigation and Internal Controls

Provide risk perspective and auditing advice and counsel to the Board and management in operational and financial activities.

Publish risk-focused audit reports designed to clearly communicate the General Auditor's opinion regarding the internal control structure, significant control issues, and recommendations to mitigate noted risk.

Improve the completion time for audits and evaluate the adequacy and timeliness of management's responses to, and corrective actions taken on, all significant control issues noted in audit reports.

Emphasize test work of significant projects.

Workforce Development

Encourage training opportunities for Audit Department staff to enhance competencies in risk assessment and broaden knowledge of Metropolitan operations. Utilize this knowledge in fine-tuning the Annual Audit Risk Assessment and Audit Plan.

Management and Leadership

Efficiently manage the department's budget for maximum effectiveness of state budgetary objectives.

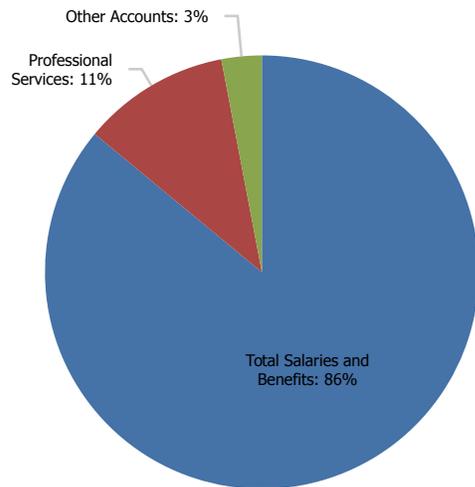
Uphold the mission, roles, and responsibilities of the Audit Department.

O&M FINANCIAL SUMMARY

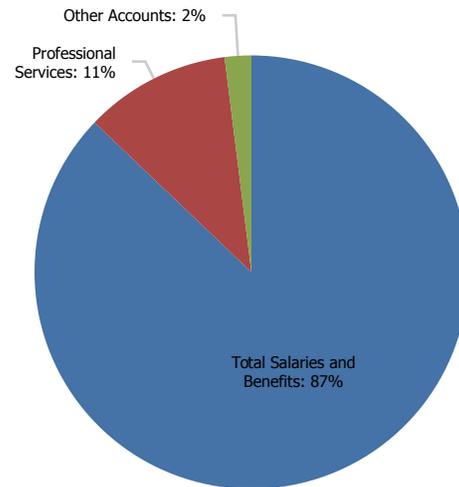
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Total Salaries and Benefits | 2,816,800 | 3,283,500 | 3,908,200 | 624,700 | 4,159,700 | 251,500 |
| <i>Direct Charges to Capital</i> | — | — | — | — | — | — |
| Total Salaries and Benefits | 2,816,800 | 3,283,500 | 3,908,200 | 624,700 | 4,159,700 | 251,500 |
| % Change | | 16.6% | | 19.0% | | 6.4% |
| Professional Services | 417,400 | 500,000 | 500,000 | — | 500,000 | — |
| Materials & Supplies | 16,900 | 16,000 | 58,000 | 42,000 | 35,000 | (23,000) |
| Memberships & Subscriptions | 3,900 | 5,500 | 5,500 | — | 5,500 | — |
| Subsidies & Incentives | 17,700 | 15,000 | 17,000 | 2,000 | 17,000 | — |
| Training & Seminars Costs | 6,400 | 17,000 | 17,000 | — | 17,000 | — |
| Travel Expenses | 3,200 | 5,000 | 5,000 | — | 5,000 | — |
| Other Accounts | 21,700 | 13,000 | 11,000 | (2,000) | 11,000 | — |
| Total O&M | 3,304,000 | 3,855,000 | 4,521,700 | 666,700 | 4,750,200 | 228,500 |
| % Change | | 16.7% | | 17.3% | | 5.1% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE



FY 2021/22 BUDGET BY EXPENDITURE



PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Regular | Total | 10 | 13 | 13 | — | 13 | — |
| | O&M | 10 | 13 | 13 | — | 13 | — |
| | Capital | — | — | — | — | — | — |
| Temporary | Total | — | — | — | — | — | — |
| | O&M | — | — | — | — | — | — |
| | Capital | — | — | — | — | — | — |
| Total Personnel | Total | 10 | 13 | 13 | — | 13 | — |
| | O&M | 10 | 13 | 13 | — | 13 | — |
| | Capital | — | — | — | — | — | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

The Audit Department’s Biennial Budget is \$4.5 million in FY 2020/21 and \$4.8 million in FY 2021/22 or an increase of 17.3% and an increase of 5.1% respectively from the prior budget years. The main factors affecting these changes:

- Increases to Salaries and Benefits reflect negotiated labor increases, merit increases for qualified employees, and succession planning.
- The increase to the budget for Materials and Supplies reflects an upgrade of Audit software.

ETHICS OFFICE

The Ethics Office promotes an ethical culture at Metropolitan by administering and advising Metropolitan's ethics policies and reviewing potential ethics violations.

PROGRAMS

Metropolitan's Ethics Office was established by special legislation enacted in 2000. In doing so, it was with a conviction that a strong ethical culture is the foundation of good governance. Moreover, it was based on the belief that an ethical culture is created through a robust ethics program that sets clear expectations for conducting business within the organization and with external parties.

An ethical culture is based on the following: effective board oversight, strong tone-at-the-top, senior management involvement, organization-wide commitment, a customized code of conduct, ethics training, communications, and ongoing monitoring system. It also involves the administration of financial disclosure reports, an anonymous incident reporting system, timely investigation of reported incidents, publication of summary investigation findings, and, where appropriate, referrals to Department managers for consistent disciplinary action.

These processes promote transparency and accountability, allowing the public insight into how the District conducts its business and holding District officials accountable for meeting internal and state ethics standards. The Ethics Office accomplishes its mission through the following programs and services, each of which is critical to achieving the ultimate goal of internal ethics and compliance - maintaining an ethics-centered culture:

Ethics Compliance The Ethics Office services as the filing officer for state-mandated financial interest disclosure reports for Directors and employees. These filings are required for individuals who make or participate in making decisions in their official capacity that could affect their personal financial interests. To date, all

Directors and over 700 employees have been identified as mandatory filers.

The Ethics Office also maintains and updates Metropolitan's conflict of interest code, designating employee reporting positions and disclosure categories. These requirements are tailored to the unique responsibilities of each designated position and are reviewed on a periodic basis for compliance with evolving standards.

Advice and Education The Ethics Office advises employees, directors, and contractors on Metropolitan's ethic policies and standards. These include the areas of conflicts of interest and proper use of authority. Advice and education are provided through consultations, training programs, and reference materials. The Ethics Office addresses requests for advice and training and recommends consultations where appropriate.

The Ethics Office also facilitates state-mandated AB1234 and sexual harassment training for Directors and provides orientations for new Directors and employees about Metropolitan's internal ethic provisions.

Policy Analysis and Program Development The Ethics Office proposes ethic rules and modifications to existing rules, performs risk assessment, and analyzes investigation procedure to maintain best practices in the field.

Investigation Investigations are undertaken both to promote accountability and to identify systematic changes needed in order to avoid further missteps. Performing comprehensive investigations, including investigation planning, gathering of evidence, document review, witness

interviews, comparative analysis of facts, drafting of reports, and organization and indexing of evidence.

The Ethics Officer reviews the investigation findings, determines whether ethics violations occurred, and makes recommendations to executive management.



GOALS AND OBJECTIVES

In FY 2020/21 and FY 2021/22, the Ethics Office will focus on the following key issues and initiatives:

Ethics Consultation

Provide ethics risk perspective and advisory services to directors, officers, and employees needing input on ethics-related issues. In specific requests for assistance, provide thorough analysis and prompt responses. Continue to review board agendas and prepare memorandum for directors to help identify potential sources of conflicts of interest in matters coming before them. Review conflict of interest disclosures from potential contractors for the professional services contracting unit and make recommendations for resolving potential conflicts. Perform outreach to Group Managers to proactively engage in the program and project process to help maintain ethics-centered decision-making.

Policy Development

Continue to assess the scope and content of Metropolitan’s ethics policies and provisions. Develop new ideas for improvements and work to achieve consensus among stakeholders.

Follow developments in legislation and Fair Political Practices Commission proceedings to identify emerging issues that may affect the Metropolitan community.

The Ethics Office performs objective and comprehensive investigations of ethics complaints, which entails investigation planning, gathering evidence, document review, witness interviews, comparative analysis of facts, drafting of reports, and organization and indexing of evidence. The Ethics Officer reviews the investigation findings, determines whether ethics violations occurred, and makes recommendations to executive management.

Investigations

Evaluate opportunities to streamline the investigation process. These efforts include establishing reasonable guidelines to ensure that inquiries proceed in an efficient and responsible manner. Improve the effectiveness and timeliness of communication to interested parties on the progress of investigations. Define accountability standards for investigations that address the need to discontinue or close inquiries when substantiating evidence cannot be obtained within a reasonable time period. Survey best practices in the field and recommend improvements to Investigation Guidelines.

Education and Outreach

Design accessible and understandable ethics education programs focused on needs of different work groups. Increase the number of in-person presentations.

Update employee orientation materials, website content, and online training program and create new fact sheets and pamphlets on the most common ethics topics facing Metropolitan.

Workforce Development

Encourage training opportunities for Ethics Department staff to enhance competencies in governmental ethics and to broaden knowledge of Metropolitan operations. Utilize this knowledge in fine-tuning Ethics consultation, policy development and outreach efforts.

Management and Leadership

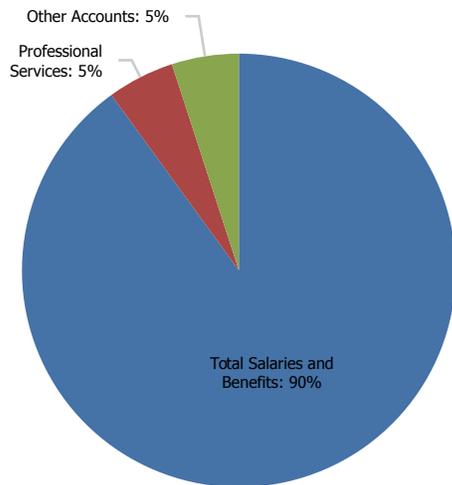
Efficiently manage the Ethics Office's budget for maximum effectiveness. Uphold the missions, roles, and responsibilities of the Ethics Office.

O&M FINANCIAL SUMMARY

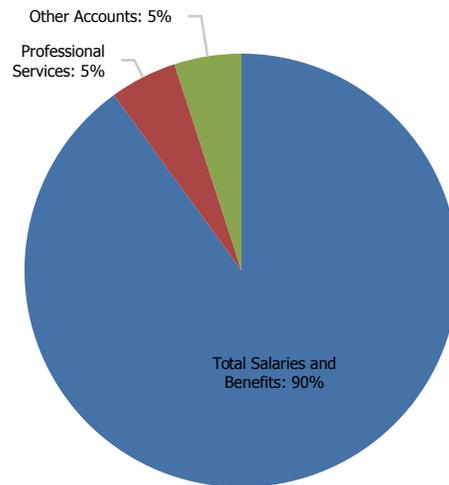
| | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|---|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Total Salaries and Benefits | 1,018,700 | 1,299,700 | 1,460,400 | 160,700 | 1,518,900 | 58,500 |
| <i>Direct Charges to Capital</i> | — | — | — | — | — | — |
| Total Salaries and Benefits | 1,018,700 | 1,299,700 | 1,460,400 | 160,700 | 1,518,900 | 58,500 |
| % Change | | 27.6% | | 12.4% | | 4.0% |
| Professional Services | 17,100 | 85,000 | 85,000 | — | 85,000 | — |
| Materials & Supplies | 10,500 | 1,500 | 26,500 | 25,000 | 26,500 | — |
| Outside Services - Non Professional / Mainte | — | 16,700 | 17,000 | 300 | 17,000 | — |
| Subsidies & Incentives | 1,100 | 13,000 | 13,000 | — | 13,000 | — |
| Training & Seminars Costs | 3,200 | 6,000 | 6,000 | — | 6,000 | — |
| Travel Expenses | 2,900 | 6,000 | 6,000 | — | 6,000 | — |
| Other Accounts | 25,300 | 20,500 | 7,500 | (13,000) | 7,500 | — |
| Total O&M | 1,078,800 | 1,448,400 | 1,621,400 | 173,000 | 1,679,900 | 58,500 |
| % Change | | 34.3% | | 11.9% | | 3.6% |

Totals may not foot due to rounding.

FY 2020/21 BUDGET BY EXPENDITURE



FY 2021/22 BUDGET BY EXPENDITURE



PERSONNEL SUMMARY

| | | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------|-------------------|-------------------|-------------------|------------------------|-------------------|------------------------|
| Regular | Total | 4 | 5 | 5 | — | 5 | — |
| | O&M | 4 | 5 | 5 | — | 5 | — |
| | Capital | — | — | — | — | — | — |
| Temporary | Total | — | — | — | — | — | — |
| | O&M | — | — | — | — | — | — |
| | Capital | — | — | — | — | — | — |
| Total Personnel | Total | 4 | 5 | 5 | — | 5 | — |
| | O&M | 4 | 5 | 5 | — | 5 | — |
| | Capital | — | — | — | — | — | — |

Totals may not foot due to rounding.

BUDGET HIGHLIGHTS

The Ethics Office’s Biennial Budget is \$1.6 million in FY 2020/21 and \$1.7 million in FY 2021/22 or an increase of 11.9% and an increase of 3.6% respectively from the prior budget years. The increase is due primarily to the following:

- Salaries and Benefits reflect negotiated labor increases and merit increases for qualified employees.
- Professional Services and non-labor budgets remain flat over the biennium.

This page intentionally left blank.

STAFFING SUMMARY

| Group/Department | 2018/19 Actual | 2019/20 Budget | 2020/21 Budget | 2021/22 Budget |
|--|-------------------|-------------------|-------------------|-------------------|
| Regular Employees | | | | |
| Office of the General Manager | 13 | 13 | 13 | 13 |
| Water System Operations | 862 | 940 | 940 | 940 |
| Water Resource Management | 59 | 68 | 68 | 68 |
| Engineering Services | 320 | 355 | 355 | 355 |
| Bay Delta Initiatives | 17 | 17 | 17 | 17 |
| Office of the Chief Administrative Officer | 98 | 113 | 114 | 114 |
| Information Technology | 120 | 134 | 130 | 130 |
| Human Resources | 39 | 42 | 42 | 42 |
| Real Property | 41 | 51 | 50 | 50 |
| Office of the Chief Financial Officer | 46 | 49 | 51 | 51 |
| External Affairs | 69 | 70 | 72 | 72 |
| Subtotal - General Manager's Department | 1,684 | 1,852 | 1,852 | 1,852 |
| Office of Ethics | 4 | 5 | 5 | 5 |
| Office of the General Auditor | 10 | 13 | 13 | 13 |
| Office of the General Counsel | 35 | 37 | 37 | 37 |
| Total - Departmental Regular Employees | 1,734 | 1,907 | 1,907 | 1,907 |
| Temporary Employees | | | | |
| District Temporary | 47 | 23 | 43 | 37 |
| Total Authorized Positions | — | 1,930 | 1,950 | 1,944 |

Totals may not foot due to rounding.

OPERATING EQUIPMENT SUMMARY

| Classification | 2020/21 Quantity | 2020/21 Amount | 2021/22 Quantity | 2021/22 Amount |
|-------------------------------|---------------------|-------------------|---------------------|-------------------|
| Audio Visual | 10 | 152,132 | 8 | 144,706 |
| Automobiles | 15 | 569,323 | 8 | 250,809 |
| Boats | — | — | 1 | 98,550 |
| Communication Equipment | 7 | 191,625 | — | — |
| Construction/Shop/Maint Equip | 25 | 794,198 | 34 | 1,025,000 |
| CPU's, Laptops & Servers | 24 | 662,939 | 20 | 503,700 |
| Drafting Equipment | 1 | 6,680 | — | — |
| Equipment Accessories | 1 | 8,541 | — | — |
| Heavy Equipment | 8 | 1,223,567 | 9 | 1,565,990 |
| Lab Equipment | 8 | 1,040,779 | 5 | 1,022,107 |
| Monitoring Equipment | 13 | 294,173 | 10 | 230,000 |
| Office Equipment | 2 | 18,341 | — | — |
| Other Equipment | 24 | 610,745 | 11 | 284,253 |
| Printers | 3 | 89,757 | 1 | 34,623 |
| Pumps | 4 | 101,287 | — | — |
| Survey Equipment | 12 | 390,376 | 4 | 132,766 |
| Trucks | 22 | 1,703,067 | 34 | 1,830,926 |
| Utility Vehicles | 1 | 20,953 | 1 | 30,003 |
| Grand Total | 180 | 7,878,483 | 146 | 7,153,433 |

Totals may not foot due to rounding.

PERFORMANCE MEASURES

| Performance Measure | Measurement Intent | FY 18/19 Performance | FY 19/20 Performance* | Target |
|--------------------------------|---|---|---|--|
| Delta Milestones | Pursue actions to advance planning and design work through the Delta Conveyance Design and Construction Authority (DCDCA) and facility financing in collaboration with the Delta Conveyance Finance Authority (DCFA). | 91% | 90% | 95% |
| | Regulatory, Planning, and Legislative Support | 95% | 90% | 95% |
| | Science Development | 95% | 95% | 95% |
| | Emergency Preparedness Planning and Implementation | 95% | 95% | 95% |
| Credit Rating | Enable Metropolitan to access capital markets at the lowest borrowing cost. | Moody's Aa1 S&P - AAA Fitch - AA+ | Moody's Aa1 S&P - AAA Fitch - AA+ | AA, Aa2 or better |
| Maintain Reserve Balances | Ensure financial strength by managing reserves to within Board-established policy. | \$460 M | \$487 M | Between \$257M & \$626M for FY 18/19 Between \$270M & \$654M for FY 19/20 |
| Fixed Charge Coverage | Demonstrate sufficiency of revenues to cover fixed charges. | 1.41 | 1.52 | ≥1.2 |
| Public Awareness | Monitor awareness of critical water issues to gauge effectiveness of outreach efforts as a percent of organizations reached with Metropolitan's message. | Media - 98% Legislative - 167% | Legislative - 133% | ≥85% |
| Implement Legislative Strategy | Measure passage of Metropolitan-supported legislation as a measure of the effectiveness of efforts in support of water policy issues. | 172% | 88% | ≥85% |
| Unexpected Outages | Monitor water system maintenance and operations reliability to ensure uninterrupted water service. | 1 | 2 | 0 service shutdowns |

| Performance Measure | Measurement Intent | FY 18/19 Performance | FY 19/20 Performance* | Target |
|-------------------------------------|--|-----------------------------|------------------------------|--|
| Meet All Scheduled Water Deliveries | Monitor reliability of water delivery as an indicator of effectiveness of maintenance activities and replacement and improvement projects. | 100% | 100% | 100% |
| Complete Preventative Maintenance | Optimize maintenance processes to ensure timely completion of preventative maintenance (PM) work. | 90.5% | 91.3% | > 90% |
| CRA Power | Secure economical power for CRA pumping needs. | 100% | 100% | 100% |
| Electrical Reliability | Meet electrical reliability standards to pass all annual audits and inspections. | 100% | 100% | 100% |
| Complete Regulatory Maintenance | Ensure timely completion of regulatory preventive maintenance work orders. | 98.3% | 98.3% | >99% |
| Aqueduct Readiness | Maintain eight-pump flow readiness to ensure conveyance reliability | — | 0 | One stable test at eight-pump flow (1,750 cfs) annually. |
| Hydropower Generation | Optimize hydropower generation by minimizing power revenues lost to forced outages. | 0.3% | 0.0% | < 5% of power revenue lost |
| Emergency Preparedness | Prepare for emergencies by conducting three emergency response exercises at all operational units annually. | 58 | 65 | ≥39 |
| O&M Training | Ensure O&M employees complete training in accordance with training plans | 88.5% | 87.0% | ≥ 90% |
| Apprenticeship Program | Ensure sufficient apprentices graduate to meet O&M needs. | 16 | 0 | ≥15 graduates annually |

| Performance Measure | Measurement Intent | FY 18/19 Performance | FY 19/20 Performance* | Target |
|---|---|-----------------------------|------------------------------|------------------------------------|
| Compliance with Drinking Water Standards | Ensure that all state, federal, and local water quality standards are met or exceeded. | 100% | 100% | 100% |
| Total Dissolved Solids (TDS) mg/l | Monitor water quality compliance with the Board of Directors' salinity goals. | 478 mg/l | 386 mg/l | ≤ 500 mg/l |
| Water Quality Satisfaction | Strive to minimize the number of customer complaints reported from member agencies as an indicator of overall water quality satisfaction. | 2 | 3 | < 10 complaints annually |
| Water Quality Regulatory Process | Actively engage in providing written comments on all applicable water quality regulations and public health determinations. | 100% | 100% | 100% |
| Source Water Quality | Actively protect source water quality by engaging stakeholders on each recommendation from the 2012 Colorado River sanitary survey | 60% | 71% | 100% completion by 2020 |
| Environmental Compliance | Ensure compliance with all environmental permit requirements | 98.4% | 99.3% | 100% |
| Manage SWP, supply programs and demand management program | Manage SWP, supply program, and demand management program expenditures within budget | 83.8% | 84.0% | 100% |
| Manage storage resources | Manage storage resources to capture or deliver all available contractual imported supplies | 100% | 100% | 100% |
| Worker Safety | Ensure worker safety by enacting practices that minimize the injury/illness rate. | 2.85 | 2.37 | < 6.9 incidents/year/100 employees |
| Identify and manage supplies and programs | Identify and manage supplies and programs sufficient to meet demands | 100% | 100% | 100% |

| Performance Measure | Measurement Intent | FY 18/19 Performance | FY 19/20 Performance* | Target |
|---|--|-----------------------------|------------------------------|--|
| Final Design Cost as a percentage of Construction Cost | Ensure costs are compatible with industry standards of similar agencies by measuring for cost efficiency and value-added feature | 7.8% 11.3% | 10.0% 14.1% | 9% - 12% (Const. Costs > \$3 M) 9% - 15% (Const. Costs ≤ \$3 M) |
| Construction Inspection Cost as a percentage of Construction Cost | Ensure costs are comparable to industry standards of similar agencies | 12.3% 11.0% | 7.0% 13.2% | 9% - 12% (Const. Costs > \$3 M) 9% - 15% (Const. Costs ≤ \$3 M) |
| Number of Leases Negotiated at or above FMV | Monitor number of existing leases and new leases negotiated at or above Fair Market Value. | 100% | 100% | 100% |
| Revenue Generated from Real Property Activities | Track total revenue generated from all real property activities including but not limited to permits, licenses, leases, easements or other use fees. | \$16.9 M | \$2.8 M | \$6.8 M |
| Invoices paid on time | 100% of valid invoices paid on time and in accordance with contract | 95.8% | 94.7% | 100% |
| Departmental O&M Budget Performance | Demonstrate financial control and accountability | 95.3% | 96.7% | ≤ 100% |
| Significant External Audit Findings | Assess the quality of accounting processes and controls | NA | NA | 0 |

* Actual performance through March 2020

STATE WATER PROJECT

OVERVIEW

Metropolitan participates in the State Water Project (SWP), which is managed and operated by the California Department of Water Resources (DWR) and is an integral part of Metropolitan's conveyance system. The SWP 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 SWP provides irrigation water to 750,000 acres of farmland, mostly in the San Joaquin Valley, and provides municipal and industrial water to approximately 25 million of California's estimated 39.2 million residents.

The SWP consists of a complex system of dams, reservoirs, power plants, pumping plants, canals and aqueducts to deliver water. SWP water consists of water from rainfall and snowmelt runoff that is captured and stored in SWP conservation facilities and then delivered through SWP 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 SWP through the California Aqueduct, which is 444 miles long, and at four delivery points near the northern and eastern boundaries of Metropolitan's service area. The budgeted costs for the SWP are as follows:

SWC Cost Summary, \$ millions¹

| | 2018/19 Actuals | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|-----------------------------------|--------------------|-------------------|-------------------|---------------------------|-------------------|---------------------------|
| Delta Water Charge: Capital | \$38.8 | \$38.7 | \$57.5 | \$18.8 | \$59.7 | \$2.3 |
| Delta Water Charge: OMP&R | 88.4 | 96.2 | 92.4 | (3.8) | 92.4 | 0.0 |
| Transportation Capital | 138.2 | 125.3 | 136.8 | 11.5 | 148.3 | 11.4 |
| Transportation OMP&R | 120.0 | 195.4 | 179.8 | (15.6) | 182.9 | 3.1 |
| Power, Variable | 127.5 | 172.4 | 205.2 | 32.8 | 212.7 | 7.5 |
| Power, OAPF | 3.6 | 2.4 | 5.8 | 3.4 | 3.5 | (2.3) |
| Credits | (34.2) | (41.0) | (61.8) | (20.8) | (70.1) | (8.4) |
| CA Water Fix/ Delta Conveyance | — | 13.0 | 25.0 | 12.0 | 25.0 | 0.0 |
| SWC Total | \$482.3 | \$602.5 | \$640.8 | \$38.3 | \$654.4 | \$13.6 |
| SWC Dues | \$3.3 | \$4.7 | \$3.9 | (\$0.9) | \$3.9 | \$0.0 |
| Acre–feet delivered | 945,646 | 906,675 | 1,063,240 | 156,565 | 1,059,490 | (3,750) |

¹ Does not include Departmental costs reflected elsewhere in this Budget.

Annually, the DWR reviews and redetermines the water supply aspects of the SWP as required by the SWC, and the financial aspects attributable to the water supply function of the SWP.¹ This results in the annual Statement of Charges to the Contractors for each calendar year. The information that supports the Statement of Charges is published by the DWR as Appendix B to the appropriate Bulletin 132 (i.e., the Statement of Charges for Calendar Year 2020 is supported by Appendix B to Bulletin 132-19). DWR does not charge rates for water service. It does not develop a revenue requirement and then develop rates based on projected billing determinants for a calendar year. Rather, DWR apportions its costs to the Contractors based on their proportionate share of estimated supply costs (Delta Water Charge) and transportation costs (Transportation Charge). All State Water Contractors are obligated to pay all costs incurred by DWR to operate the SWP for water supply delivery, as part of their contractual participation in the project. Therefore, DWR reconciles actual costs for each year and either collects more funds from the Contractors if actual costs exceeded estimated costs, or provides a credit/refund if actual costs were lower than estimated costs.

Metropolitan's budgeted SWP costs are based on the 2020 Statement of Charges and supporting Appendix B. Power costs are estimated by Metropolitan assuming a 50 percent allocation and use of the Central Valley storage programs.

STATE WATER CONTRACT

All water supply-related capital expenditures and operations, maintenance, power and replacement (OMP&R) costs associated with the SWP conservation and transportation facilities are paid for by the 29 State Water Contractors. Through Calendar Year 2018, Metropolitan has paid about 60 percent of the total payments to DWR by all Contractors. Metropolitan's financial records show that total accumulated amounts paid under the SWC are \$13.2 billion through fiscal year 2018/19. Metropolitan's SWC was originally a 75-year contract through December 31, 2035. Although the SWC had been amended for other provisions before, the term of the contract was extended and approved in December 2018. Among other amendments, the Contractors and DWR agreed to an extension to December 31, 2085. The Contract Extension Amendment has been challenged in court. However, the amendments have not yet been implemented.

The State Water Contractors have long-term contracts with DWR for participation in the SWP, through which they receive delivery of SWP water and use of the SWP transportation facilities. Metropolitan signed the first State Water Contract (SWC) on November 4, 1960, and received its first delivery of SWP water in 1972. Metropolitan has a contractual right to a proportionate share of the project water that DWR determines is available for allocation to the Contractors. This determination is made each year based on existing supplies in storage, forecasted hydrology, and other factors. Available project water is then allocated to the Contractors in proportion to the amounts set forth in Table A of their SWCs (Table A Allocation). Under its SWC, Metropolitan is entitled to roughly 46% of the annual Table A Allocation.

Since inception, the SWC provided Contractors the ability to use the SWP to convey non-SWP water under certain circumstances. Specifically, Article 18(c)(2) of the original SWC addresses situations where there is a shortage in the supply of water made available under the contract and states "[T]he District, at its option, shall have the right to use any of the project transportation facilities which by reason of such permanent shortage in the supply of project water to be made available to the District are not required for delivery of project water to the District, to transport water procured by it from any other source: [p]rovided, [t]hat such use shall be within the limits of the capacities provided in the project transportation facilities for service to the District under this contract". However, Article 18(c)(2) only applied in the event a permanent shortage was declared by DWR and it was unclear on how costs would be charged for using SWP facilities to transport nonproject water. In 1994, the Contractors and DWR negotiated the Monterey Amendment to the SWC, including Article 55, which made explicit that the Contractors' rights to use the portion of the SWP conveyance system necessary to deliver

¹ The term "supply" is used to distinguish between other functions of the SWP such as recreation and flood control. The term is not used to distinguish between the conservation (supply) and transportation (conveyance) functions of the SWP under the State Water Contracts for participation in the SWP.

water to them (their “reaches”) also includes the right to convey non-SWP water at no additional cost as long as capacity exists. Power for the conveyance of non-SWP water is charged at the SWP melded power rate. The Monterey Amendments also expanded the ability to carryover SWP water in SWP storage facilities, allowed Contractors to store water in groundwater storage facilities outside a Contractor’s service area for later use, and permitted certain Contractors to borrow water from terminal reservoirs. These amendments, approved by Metropolitan’s Board in 1995, offered the means for individual Contractors to increase supply reliability through water transfers and storage outside their service areas.

The charges to the Contractors include a SWP supply charge (Delta Water Charge) and a SWP transportation charge (Transportation Charge). The Delta Water Charge recovers both Capital and OMP&R costs for those facilities that conserve and create the actual water supply of the SWP. The Delta Water Charge is based on Contractors’ cumulative Table A Allocations, and is paid regardless of whether Contractors receive any Table A Allocations in a given year.

The Transportation Charge recovers the costs associated with the various aqueduct reaches that deliver project water to the Contractors. The Capital and fixed OMPR portions of the SWP Transportation Charge recover costs from the Contractors based on their proportionate use of facilities. Unlike the Delta Water Charge, which is uniform for a unit of Table A water, the allocation of these portions of the Transportation Charge will vary based on the aqueduct segments needed to deliver water to a specific Contractor. The further a Contractor is from the Delta and the greater its capacity in the transportation facilities, the greater its allocation of the Capital and fixed OMPR Transportation Charges. The capacity of the SWP to deliver water decreases with distance from the Banks Pumping Plant, located in the Sacramento–San Joaquin Delta, as water is delivered to Contractors through the South Bay Aqueduct and the Coastal Branch Aqueduct, and to turnouts in the San Joaquin Valley and Southern California. Payment of the Transportation Charge entitles Contractors to the right to use their capacity in the SWP facilities for transportation of SWP or non-SWP water, on a space available basis, under the SWC. A Contractor that participates in the repayment of a particular reach, or segment of the SWP, has already paid the costs of using that reach for the conveyance of water supplies through the Transportation Charge.

In addition to the charges for water supply and transportation facilities discussed above, DWR also charges for the power needed to deliver project water throughout the system. Two charges recover these power costs: the variable OMPR portion of the Transportation Charge (Variable Charge) and the Off Aqueduct Power Facilities (OAPF) charge. Because the SWC are cost recovery contracts, DWR invoices Contractors on an estimated basis for any calendar year, and then provides credits in later years once cost true-ups are finished.

The Variable Charge includes the annually estimated cost of purchased power including capacity and energy, cost of SWP power generation facilities, program costs to offset annual fish losses at the Banks Pumping Plant, purchased transmission services, and credits for sales of ancillary services and excess SWP system power sales. The Variable Charge is calculated on the basis of the energy required to pump an acre-foot of water to its take-out point multiplied by the system energy rate, less energy from the recovery generation plants. The system energy rate is a system-wide average rate calculated as the net cost of energy—total costs less revenues—divided by the net energy required to pump all water. That rate is applied to each acre-foot of water delivered to SWP customer based on the power required to pump the water to designated delivery points on the system. DWR can adjust the system energy rate as the calendar year progresses in order to reflect actual costs.

The OAPF charge recovers the debt service and environmental remediation costs of power generation facilities not on the aqueduct, namely Reid Gardner Unit 4 and debt service associated with the South Geysers and Bottle Rock geothermal plants. The OAPF rate is calculated as the total annual estimated costs divided by the total energy required to pump all water. Recovery energy is not considered in this calculation. Each contractor’s charge is the OAPF rate times the energy required to pump the contractor’s water order.

The SWP uses low-cost hydroelectric and recovery generation resources, but they only provide about 50 percent of the SWP energy needs in an average water year. The SWP relies on the wholesale market and contractual resources with exposure to market price volatility for as much as 30 to 35 percent of its needs, using other contractual resources to fill in the difference.

The SWP energy required to move water to Metropolitan is related to the transportation on the East Branch through Devil Canyon and on the West Branch through Castaic.

Cost of SWP Power for Metropolitan Terminal Delivery Points, \$ per Acre-Foot

| | CY 2015 DWR | CY 2016 DWR | CY 2017 DWR | CY 2018 DWR | CY 2019 Estimated | CY 2020 Estimated | CY 2021 Estimated |
|-------------|------------------------|------------------------|------------------------|------------------------|------------------------------|------------------------------|------------------------------|
| East Branch | \$241.17 | \$186.21 | \$160.55 | \$174.90 | \$160.33 | \$199.67 | \$207.44 |
| West Branch | \$226.58 | \$175.85 | \$170.57 | \$162.42 | \$155.10 | \$213.79 | \$221.11 |

The SWP energy costs are impacted by two factors. First, the annual hydrology, secondly the energy policies of the state of California. The SWP has invested heavily in hydroelectric power generation facilities. The unit cost of operating the power facilities declines as the amount of available water increases. The SWP is acquiring renewable resources, primarily solar to date, to meet its obligation to reduce greenhouse gas emissions. The SWP energy costs are also impacted by the increasing cost of using the California Independent System Operator’s (CAISO) grid to deliver power from its generating sources and the wholesale power market to its pumping loads. The SWP does not own high voltage transmission facilities and must use the CAISO grid to move power; the SWP is the largest payer of the CAISO transmission access rates. Finally, the SWP has an obligation to acquire and surrender emissions allowances for the generating facilities the SWP owns, primarily the Lodi Energy Center.

BUDGET HIGHLIGHTS

The budget for the SWP is increasing in FY 2020/21 compared to the FY 2019/20 budget due to substantial capital related expenditures for Oroville Spillway repair and California Aqueduct improvements. Power costs are projected to be higher due to higher water deliveries and a projected increase in the CAISO transmission access charge (TAC) by the State Water Contractors. FY 2021/22 projects an increase in Transportation Capital and O&M related costs.

The Biennial Budget includes Metropolitan’s planned contribution of \$25 million per year for Delta conveyance project planning activities, which contributes to the increase in SWP expenditures in FY 2020/21. This contribution follows Board policy that staff work with the State to find solutions to improve Delta conveyance. The focus over the next two years will be supporting the California Department of Water Resources as it seeks permits for a Delta conveyance project; participating in the Delta Conveyance Design and Construction Authority; and continuing to put forward sound scientific research to help inform and improve Delta management decisions. If staff determines that Metropolitan’s appropriate contribution toward planning activities should exceed the budgeted amount, the General Manager will request authorization from the Board for additional funding. Additionally, at a later date staff will recommend that the Board separately consider Metropolitan’s participation in a new Delta conveyance project, after project planning has progressed further.

COLORADO RIVER AQUEDUCT

OVERVIEW

Metropolitan was established to obtain an allotment of Colorado River water, and its first mission was to construct and operate the Colorado River Aqueduct (CRA). The CRA consists of 5 pumping plants, 305 miles of high voltage power lines, 1 electric switching station, 4 regulating reservoirs, and 242 miles of aqueducts, siphons, canals, conduits and pipelines terminating at Lake Mathews in Riverside County. Metropolitan first delivered CRA water in 1941 to its member agencies.

Metropolitan owns, operates, and manages the CRA. Metropolitan is responsible for operating, maintaining, rehabilitating, and repairing the CRA, and is responsible for obtaining and scheduling energy resources adequate to power pumps at the CRA's five pumping stations.

Under its contracts with the federal government, Metropolitan has a fourth priority to 550,000 acre-feet per year of Colorado River water, less certain use by higher priority holders and Indian tribes. Metropolitan also holds a fifth priority for an additional 662,000 acre-feet per year that exceeds California's 4.4 million acre-foot per year basic apportionment, 38,000 acre-feet under the sixth priority during the term of the Colorado River Water Delivery Agreement, and another 180,000 acre-feet per year when surplus flows are available. Metropolitan can obtain water under the fourth, fifth, and sixth priorities from:

- Water unused by the California holders of priorities 1 through 3;
- Water saved by extraordinary conservation programs, crop rotation, and water supply program; or,
- When the U.S. Secretary of the Interior makes available:
 - o Surplus water, Intentionally Created Surplus water, and/or
 - o Water apportioned to, but unused by, Arizona and Nevada.

CRA Cost Summary, \$ millions

| | 2018/19 Actuals | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|------------------------|--------------------|-------------------|-------------------|---------------------------|-------------------|---------------------------|
| CRA Power ¹ | \$39.3 | \$52.9 | \$52.2 | (\$0.7) | \$57.6 | \$5.4 |
| CRA Dues ² | \$0.7 | \$0.7 | \$0.8 | \$0.1 | \$0.8 | — |
| Acre-feet | 798,103 | 915,550 | 745,173 | (170,377) | 732,790 | (12,383) |

¹Does not include Departmental costs reflected elsewhere in this Budget

²Six Agency and Colorado River Authority of California

Budgeted CRA Power costs represent expenditures for the Hoover and Parker contracts and market power purchases to support budgeted CRA water deliveries.

CRA COSTS FOR TRANSPORTATION AND SUPPLY

Metropolitan incurs capital and operations and maintenance expenditures to support the CRA activities. The direct costs of the CRA activities include labor, materials and supplies, outside services to provide repair and maintenance, and professional services. The CRA activities benefit from Water System Operations support services and management supervision, as well as Administrative and General activities of Metropolitan. Metropolitan finances past, current and future capital improvements on the CRA, and capitalizes those improvements as assets. The costs of Metropolitan’s capital financing activities are apportioned to service functions, such as the CRA.

The costs of the CRA supply portfolio developed by Metropolitan are paid by Metropolitan. The CRA supply portfolio is supported by Water Resource Management labor, materials and supplies. The CRA supply portfolio activities benefit from Water Resource Management support services and management supervision, as well as Administrative and General activities of Metropolitan. Metropolitan finances past, current and future capital improvements associated with the CRA supply portfolio capital assets and has capitalized these investments as Participation Rights.

Accordingly, the CRA costs for transportation and supply are reflected in the Departmental and General District Requirements budgets.

CRA COST FOR POWER

Metropolitan currently has three basic sources of power available to meet CRA energy requirements: Hoover Power, Parker Power, and wholesale purchases from entities in the Western United States. Each source is obtained at different unit prices.

Cost of CRA Power Sources, \$ per Megawatt-hour (MWh)

| | FY 2015 | FY 2016 | FY 2017 | FY 2018 | FY 2019 |
|-----------------------------|---------|---------|---------|---------|---------|
| Hoover ¹ | \$15.84 | \$15.36 | \$17.86 | \$18.46 | \$18.33 |
| Parker ¹ | \$13.55 | \$12.58 | \$15.40 | \$14.38 | \$17.67 |
| SP15, off-peak ² | \$33.15 | \$24.97 | \$26.48 | \$28.27 | \$38.52 |
| SP15, on-peak ³ | \$40.68 | \$30.13 | \$33.46 | \$38.84 | \$49.97 |

¹Information from Annual Reports for years 2015, 2016, 2017, 2018, and 2019

²SP15, off-peak price, is used to determine Metropolitan’s off-peak energy costs.

³SP15, on-peak, is used to determine the market value of Metropolitan’s sales of excess energy, if any. SP15 on-peak is also used to determine the pumping costs associated with pumping non-Metropolitan water through the CRA system, unless otherwise provided by contract.

Metropolitan’s current basic resource mix is cost effective but is not sufficient to pump Metropolitan’s Colorado River water supplies in all years. For that reason, Metropolitan is required to purchase supplemental power to transport Colorado River water supplies in some years. As a result, Metropolitan requires that any party seeking to transport non-Metropolitan water through its Colorado River Aqueduct to purchase, or arrange for Metropolitan to purchase, the power supplies required to pump that water.

Supplemental power can be purchased and transmitted to Metropolitan to pump non-Metropolitan water through the CRA. The market rate for electric energy prices is regularly tracked and published for various regions in California. Metropolitan uses the CAISO Open Access Same-time Information System (OASIS) Day-Ahead Locational Marginal Price as reflective of the supplemental power costs for electric energy used for its pumping plants on the CRA. The regional index applicable to energy sold for use on the CRA is designated as “South-of-Path 15”, or SP15, and is reflective of Southern California market energy prices.

South-of-Path 15 On-Peak Energy Prices, \$/MWh

| | CY 2015 | CY 2016 | CY 2017 | CY 2018 | CY 2019 |
|-----------|---------|---------|---------|----------|---------|
| January | \$35.70 | \$30.14 | \$36.22 | \$37.09 | \$42.56 |
| February | \$31.88 | \$24.47 | \$28.52 | \$36.84 | \$72.73 |
| March | \$30.73 | \$19.61 | \$23.97 | \$32.39 | \$35.98 |
| April | \$29.03 | \$18.92 | \$26.71 | \$27.69 | \$24.83 |
| May | \$28.11 | \$23.06 | \$32.08 | \$24.12 | \$20.25 |
| June | \$37.01 | \$33.41 | \$38.14 | \$31.45 | \$24.81 |
| July | \$39.27 | \$39.03 | \$41.49 | \$101.04 | \$35.24 |
| August | \$39.02 | \$38.57 | \$54.96 | \$85.22 | \$36.39 |
| September | \$38.00 | \$35.55 | \$43.18 | \$38.32 | \$40.35 |
| October | \$35.55 | \$35.45 | \$47.86 | \$41.09 | \$35.71 |
| November | \$30.22 | \$30.67 | \$44.82 | \$55.50 | \$37.44 |
| December | \$29.83 | \$36.40 | \$44.21 | \$57.26 | \$37.80 |

MWh = megawatt-hour, or 1,000 kilowatt-hours

BUDGET HIGHLIGHTS

The budget for the CRA power is decreasing in FY 2020/21 compared to FY 2019/20 due to lower diversions at Intake. In FY 2021/22, costs are higher due to a new greenhouse gas charge to be collected by the California Air Resources Board.

This page intentionally left blank.

SUPPLY PROGRAMS

OVERVIEW

Metropolitan’s principal sources of water supplies are the State Water Project (SWP) and the Colorado River. Metropolitan receives water delivered from the SWP under State Water Contract (SWC) provisions, including contracted supplies, use of carryover storage in San Luis Reservoir, and surplus supplies. Metropolitan also holds rights to a basic apportionment of Colorado River water and has priority rights to an additional amount from the Colorado River depending on availability of surplus supplies. The Supply Programs supplement these SWP and Colorado River supplies. The budgeted costs for the Supply Programs are as follows:

Supply Programs Cost Summary, \$ millions

| | 2018/19 Actuals | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|--|--------------------|-------------------|-------------------|---------------------------|-------------------|---------------------------|
| IID/MWD Conservation | \$12.3 | \$9.5 | \$13.8 | \$4.3 | \$13.2 | (\$0.6) |
| In Basin | 1.1 | 1.6 | 6.3 | 4.7 | 1.6 | (4.6) |
| Other CRA | 7.9 | 9.3 | 14.2 | 4.9 | 14.6 | 0.4 |
| PVID Program | 7.3 | 6.2 | 8.1 | 1.9 | 5.4 | (2.7) |
| SWP Programs | (1.6) | 27.8 | 26.4 | (1.4) | 26.4 | — |
| Total Supply Programs¹ | \$27.1 | \$54.4 | \$68.7 | \$14.3 | \$61.2 | (\$7.5) |

¹ Does not include Departmental costs reflected elsewhere in this Budget.

Budgeted Supply Programs costs represent opportunities and actions associated with a 50 percent SWP allocation and diversions on the CRA of 733 to 745 thousand acre–feet (TAF). On the SWP, Supply Program expenses support maximizing storage capabilities of the Central Valley storage programs, utilizing transfer and exchange programs recently executed, and bringing the balance into the region. On the CRA, the expenses support the Palo Verde Irrigation District land fallowing program and the Imperial Irrigation District/ Metropolitan Conservation Program, as well as other programs to conserve and develop supplies.

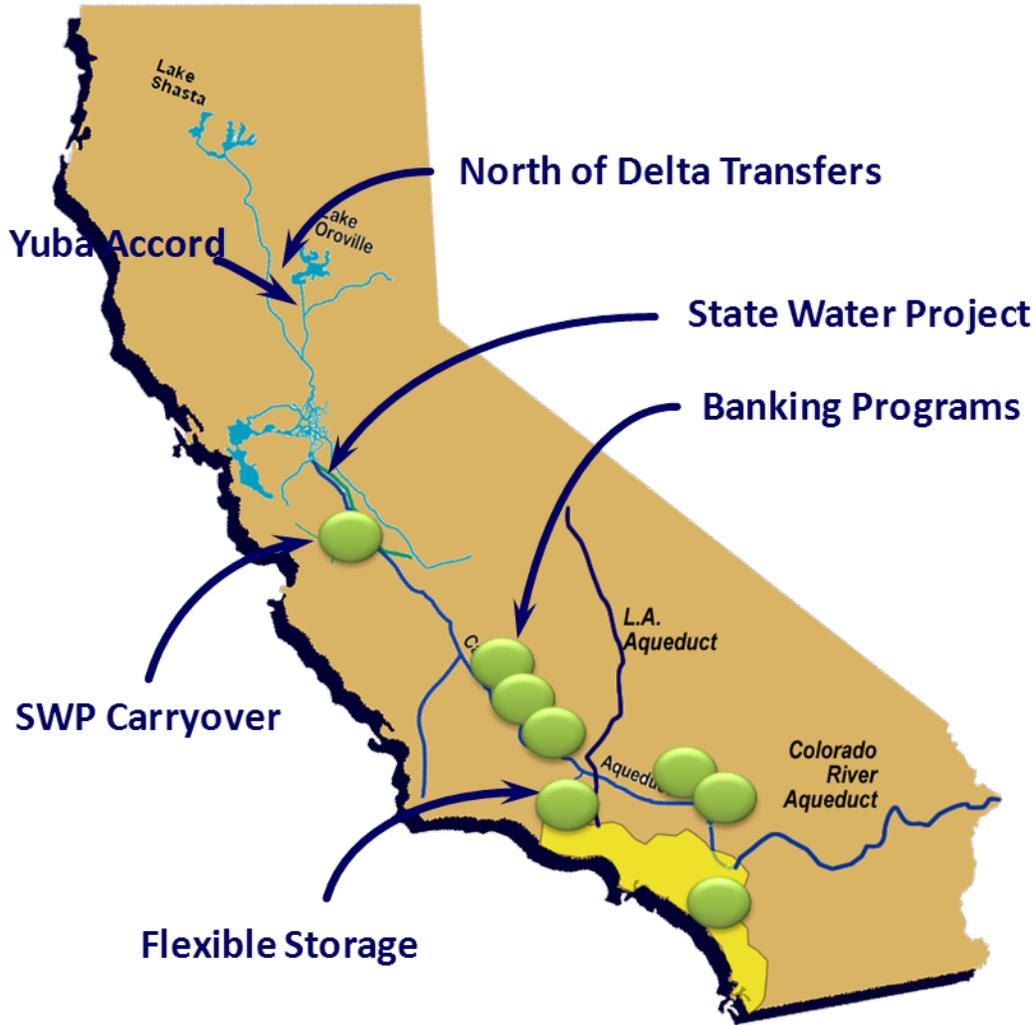
SUPPLY PROGRAMS DEVELOPED ALONG THE STATE WATER PROJECT

Since adoption of the 1996 Integrated Resources Plan (1996 IRP) and subsequent updates, Metropolitan has developed and actively managed a portfolio of supplies to convey through the California Aqueduct, as shown in Figure 10. The geographical locations of the projects are indicated by the green dots; Metropolitan’s service area is designated by the yellow highlighted area. Metropolitan submits delivery schedules to DWR for these supplies, and alters these schedules throughout the year based on changes in the availability of SWP and Colorado River water. The portfolio of supplies that Metropolitan has developed to be conveyed through the SWP since adoption of the Monterey Amendments and the 1996 IRP extend from north of the Delta to Southern California.

Since the Monterey Amendments, Metropolitan has secured one-year water transfer supplies through Metropolitan-only purchases, buyer coalition-purchases, and Governor Drought Water Banks. The most recent years that Metropolitan secured these one-year transactions were 2008 through 2010, and 2015. Metropolitan opted not to pursue these transactions in 2012 through 2014 or 2018. Most of the sellers were Sacramento Valley water users who are not Contractors. Other Contractors obtained one-year water transfers during this time frame as well. There were no single-year transfer programs in 2011, 2016-2017, or 2019 because of favorable water supply conditions and lack of capacity to move transfer supplies through the Delta.

In addition to the above one-year water transfers, Metropolitan purchases long-term water transfer supplies through the Yuba Accord. The Yuba Accord has provided water to enhance SWP and CVP water supply reliability by offsetting Delta export reductions and providing dry year water supplies for participating SWP and CVP contractors. This water is Yuba River water developed by Yuba County Water Agency (YCWA) making reservoir releases or by YCWA's member units substituting groundwater for their surface water supplies; it is not SWP water.

Figure 10: California Aqueduct Portfolio of Supplies

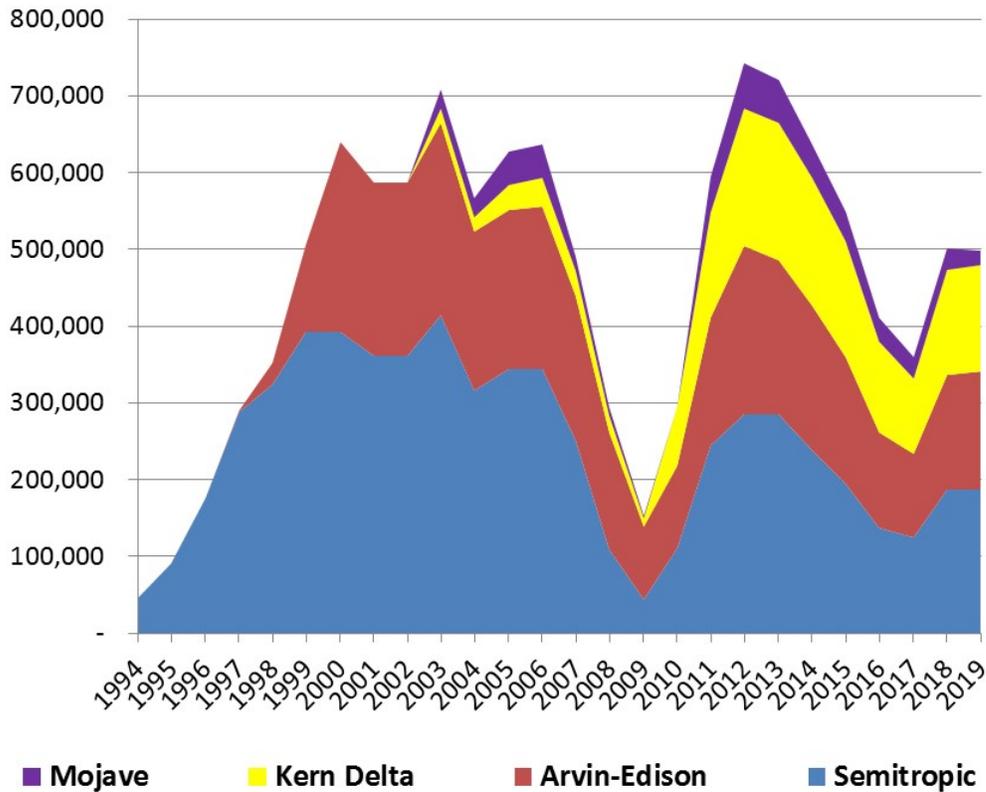


In addition to one-year transfers, and the Yuba Accord water, Metropolitan has developed groundwater storage agreements that allow Metropolitan to store available supplies in the Central Valley for return later. Metropolitan enters into point of delivery agreements with DWR to deliver water supplies from the SWP facilities to these storage programs. Metropolitan enters into introduction of local supplies agreements to return these water supplies to the SWP system for delivery to Metropolitan's service area. Metropolitan's storage activities are shown in Figure 11. The figure shows how the programs function to store supplies during surplus conditions and return supplies during a drought. The storage programs have demonstrated that they can provide a significant amount of water when needed.

SWP Groundwater Storage Programs year–end balance, acre–feet

- Arvin-Edison Storage Program: under the agreement, Arvin-Edison Water Storage District stores water on behalf of Metropolitan. Up to 350,000 acre-feet can be stored; Arvin-Edison is obligated to return up to 75,000 acre-feet of stored water in any year to Metropolitan, upon request. The water is returned by direct groundwater pump-in and exchange of SWP supplies. A 2017 State Water Resources Control Board (SWRCB) regulation setting a Maximum Contaminant Level (MCL) for trichloropropane (TCP) has temporarily suspended use of this program due to the levels detected in the program groundwater wells.
- Semitropic Storage Program: under the agreement, Metropolitan stores water in the groundwater basin underlying land within the Semitropic Water Storage District. The maximum storage capacity is 350,000 acre-feet. Currently, the minimum annual yield to Metropolitan is 38,200 acre-feet, and the maximum annual yield is 229,700 acre-feet depending on the available unused capacity and the SWP allocation. The water is returned by direct groundwater pump-in and exchange of SWP supplies.
- Kern Delta Storage Program: under the agreement, Kern Delta Water District provides groundwater banking and exchange transfer to allow Metropolitan to store up to 250,000 acre-feet of SWP water in wet years and take up to 50,000 acre-feet annually during droughts. The water is returned by direct groundwater pump-in or by exchange of surface water supplies.
- Mojave Storage Program: under the agreement, Mojave Water Agency provides groundwater banking and exchange transfers to allow Metropolitan to store up to 390,000 acre-feet for later return. The agreement allows Metropolitan to annually withdraw Mojave Water Agency’s SWP contractual amounts, after accounting for local needs. The Mojave storage program returns water only by exchange of surface water supplies.
- Antelope Valley-East Kern (AVEK) Storage Program: under the storage agreement, Metropolitan, at its discretion, would return half of the exchange water to AVEK at the Banks pumping plant. Under the Storage Program, Metropolitan, at its discretion, could store up to 30,000 acre-feet of its SWP Table A amount or other supplies in the Antelope Valley Groundwater Basin in an account designated for Metropolitan. The water is returned by exchange of SWP supplies or direct groundwater pump-in.
- Antelope Valley-East Kern (AVEK) High Desert Water Bank Program: under this agreement, AVEK provides storage for up to 70,000 acre-feet per year of its unused SWP Table A amount to Metropolitan or other supplies for later return. The maximum storage capacity for Metropolitan supplies would be 280,000 acre-feet. The program is designed to return up to 70,000 acre-feet per year by direct pump-in to the East Branch of the California Aqueduct. Water can also be returned by exchange of SWP supplies when available.

Figure 11: SWP Groundwater Storage Programs, acre-feet



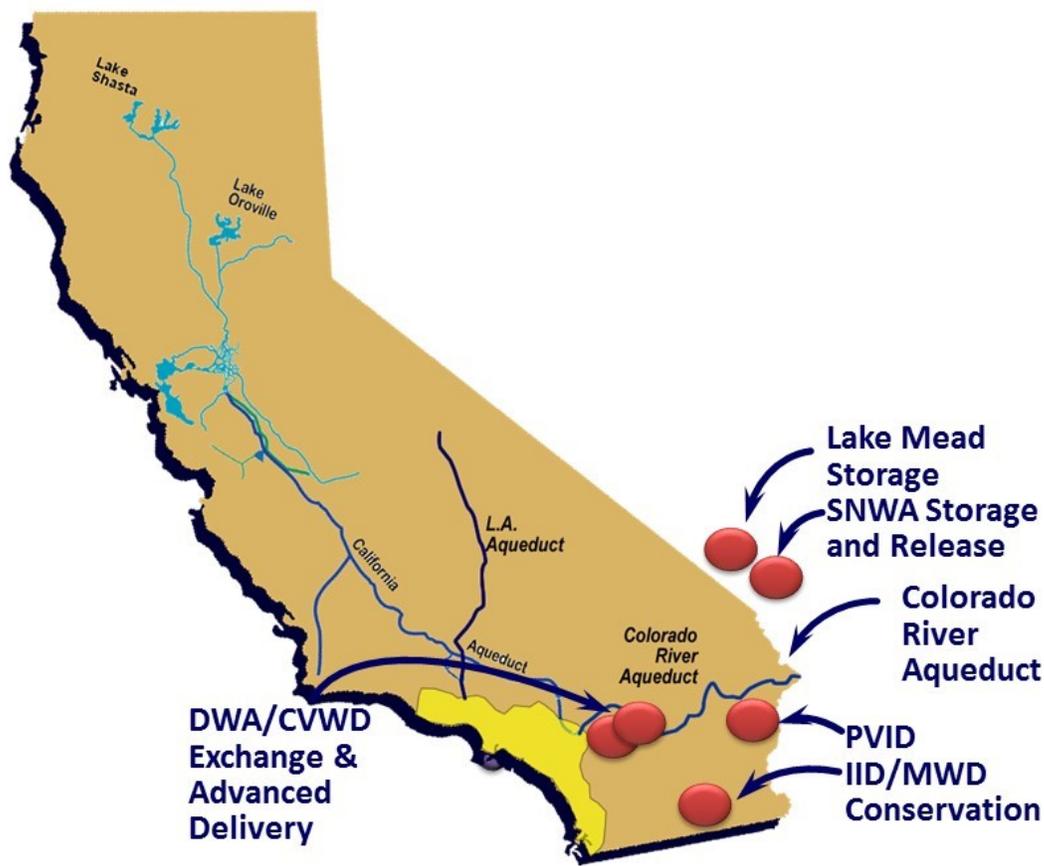
Metropolitan has developed exchanges and transfers with other Contractors to enhance supply flexibility. Some of these agencies have extensive groundwater supplies and are willing to exchange their SWP supplies.

- San Gabriel Valley Water District:** under this agreement, Metropolitan delivers treated water to a San Gabriel Valley Water District (SGVMWD) sub-agency in exchange for twice as much untreated SWP supplies delivered into the Main San Gabriel groundwater basin. The groundwater basin supplies water to both Metropolitan and SGVMWD sub-agencies. Each year Metropolitan purchases 5,000 acre-feet minus the unbalanced exchange amount. By mutual agreement Metropolitan may purchase more than the 5,000 acre-feet per year should SGVMWD have additional supplies available. This program has the potential to increase Metropolitan’s reliability by providing 115,000 acre-feet through 2035.
- Desert Water Agency/Coachella Valley Water District Advance Delivery Program:** under this program, Metropolitan delivers Colorado River water to the Desert Water Agency (DWA) and Coachella Valley Water District (CVWD) in advance of the exchange for their SWP Contract Table A allocations. In addition to their Table A supplies, the agencies can take delivery of SWP supplies available under Article 21 and the Turn-back Pool Program, and non-SWP supplies separately acquired by each agency. These non-SWP supplies have included Yuba Accord water, drought water bank water, and San Joaquin Valley water. By delivering enough water in advance to cover Metropolitan’s exchange obligations, Metropolitan is able to receive DWA and CVWD’s available SWP supplies in years in which Metropolitan’s supplies are insufficient without having to deliver an equivalent amount of Colorado River water. In December 2019, the exchange agreements were amended to provide more flexibility and operational certainty for the parties involved. Additionally, under the amended agreement, Coachella and Desert in wet years pay a portion of Metropolitan’s water storage management costs, up to a combined total of \$4 million per year.

SUPPLY PROGRAMS DEVELOPED ALONG THE COLORADO RIVER AQUEDUCT

Since adoption of the 1996 IRP and subsequent updates, Metropolitan has developed and actively manages a portfolio of supplies to convey through the CRA. Metropolitan determines the delivery schedule of those resources throughout the year based on changes in the availability of SWP and of Colorado River water. Figure 12 shows the geographic location of the portfolio of additional CRA supplies, designated by the red dots, which Metropolitan has developed for diversion into the CRA since adoption of the 1996 IRP. These resources extend from Lake Mead to Southern California and provide supply to Metropolitan’s service area, which is shown in the yellow highlighted area.

Figure 12: Colorado River Aqueduct Portfolio of Supplies



- Imperial Irrigation District/Metropolitan Conservation Program:** Under a 1988 Conservation Agreement, Metropolitan has funded water efficiency improvements within the Imperial Irrigation District’s (IID) service area in return for the right to divert the water conserved by those investments. 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 is then available to Metropolitan. Execution of the Quantification Settlement Agreement (QSA) and related agreements resulted in changes in the availability of water under the program. As a result of a 2014 IID-Metropolitan letter agreement, the amount of water conserved by IID has been quantified at 105,000 acre-feet per year beginning in 2016. Metropolitan is guaranteed at least 85,000 acre-

feet per year, with the remainder of the conserved water being made available to the Coachella Valley Water District (CVWD), if needed under the 1989 Approval Agreement as amended.

- Palo Verde Land Management, Crop Rotation, and Water Supply Program: Under this program, participating landowners in the PVID's valley service area are paid to reduce water use by not irrigating a portion of their land. A maximum of 35 percent of the participating lands within the Palo Verde Valley can be fallowed in any given year. This program saves up to 133,000 acre-feet of water in certain years, and a minimum of 33,000 acre-feet per year. The term of the program is 35 years. Fallowing began in 2005. In March 2009, Metropolitan and PVID entered into a supplemental emergency fallowing program within PVID that provided for the fallowing of additional acreage in 2009 and 2010. Since 2005, over 1.3 million acre-feet total of Colorado River water has been conserved. The volume of water that becomes available to Metropolitan is governed by the QSA and the Colorado River Water Delivery Agreement. Under these agreements:
 - Metropolitan must reduce its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is greater than 420,000 acre-feet in a calendar year, or
 - Metropolitan may increase its consumptive use of Colorado River water by that volume of consumptive use by PVID and holders of Priority 2 that is less than 420,000 acre-feet in a calendar year.

In both cases, each acre-foot of reduced consumptive use by PVID is an additional acre-foot that becomes available to Metropolitan.

- Southern Nevada Water Authority and Metropolitan Storage and Interstate Release Agreement: Under this 2004 agreement and a related Operational Agreement, the Southern Nevada Water Authority (SNWA) may offer a portion of its Colorado River water supplies to Metropolitan when there is space available in the CRA to receive the water. SNWA may call for return of the water in a future year, in which Metropolitan would reduce its Colorado River water order to return this water. In 2009, 2012, and 2015, Metropolitan, the Colorado River Commission of Nevada, and SNWA amended the related Operational Agreement dealing with volumes of water that may be stored or called at various times. The agreements can be terminated upon 90 days' notice following the return of the water stored by Metropolitan.
- Lower Colorado Water Supply Project: This project develops additional water supplies by pumping groundwater into the All-American Canal for delivery to IID. An equal volume of Colorado River water is then made available for other water users along the river. Under a contract among Metropolitan, the City of Needles, and the United States Bureau of Reclamation, Metropolitan receives any excess unused water developed by the project. Metropolitan makes payments to a trust fund to develop a replacement project or to desalt the groundwater should the groundwater become too saline for discharge into the All-American Canal.
- Lake Mead Storage Program: In December 2007, Metropolitan entered into agreements to set forth the guidelines under which Intentionally Created Surplus (ICS) water is developed, stored in, and delivered from Lake Mead. The amount of water stored in Lake Mead must be created through extraordinary conservation, system efficiency, or tributary conservation methods. ICS is available for delivery in a subsequent year, with Extraordinary Conservation ICS subject to a one-time deduction to benefit the river system and annual evaporation losses. Extraordinary conservation methods used by Metropolitan to date are water saved by fallowing in the Palo Verde Valley, projects implemented with IID in its service area, the Lower Colorado Water Supply Project, All American and Coachella Canal water received under the San Luis Rey Indian Water Rights Settlement Agreement prior to the settlement parties receiving the water, and groundwater desalination. "System Efficiency ICS" can be created through the development and funding of system efficiency projects that save water that would otherwise be lost from the Colorado River. Metropolitan has participated in two projects to create System Efficiency ICS, and two projects to create ICS by conservation in Mexico:
 - Yuma Desalting Pilot Project: Metropolitan contributed funds toward the 2010-2011 pilot run of the Yuma Desalting Plant in exchange for a portion of the desalinated water produced by the project. The Yuma Desalting Plant treated brackish agricultural drainage that flows into Mexico to the Ciénega de Santa Clara

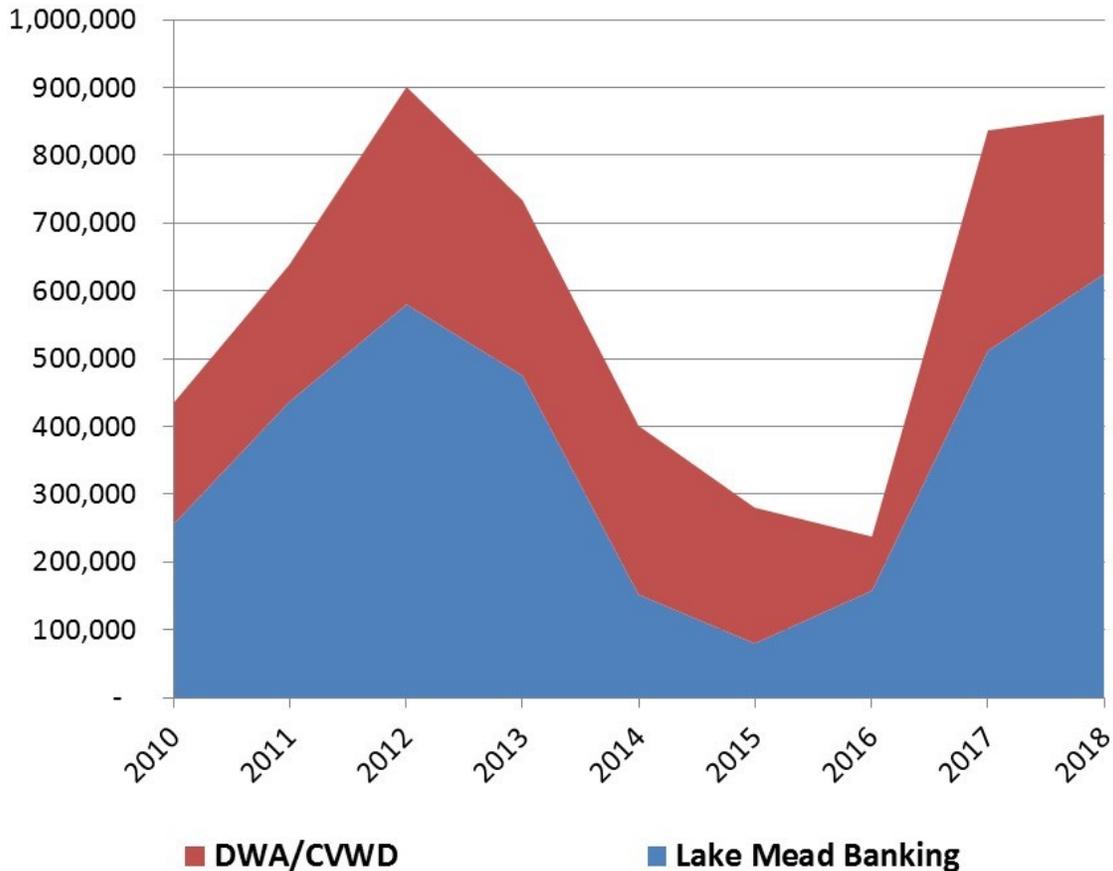
at the terminus of the Colorado River but does not count as deliveries to Mexico under the Mexican Water Treaty. Metropolitan's portion of the desalinated water was 24,397 acre-feet and this water was stored in Lake Mead. Metropolitan can take delivery of up to the entire amount in any single year.

- Drop 2 (Warren H. Brock) Reservoir: Metropolitan contributed funds toward 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. This reservoir conserves about 70,000 acre-feet of water per year by capturing and storing otherwise non-storable flow. In return for its funding, Metropolitan received 100,000 acre-feet of water that was stored in Lake Mead, and has the ability to take delivery of up to 25,000 acre-feet of water in any single year. Besides the additional water supply, the new reservoir adds to the flexibility of Colorado River operations.
- In November 2012, Metropolitan executed agreements in support of a program to augment Metropolitan's Colorado River supply between 2013 and 2017 through an international pilot project in Mexico. Metropolitan's total share of costs will be \$5 million for 47,500 acre-feet of project supplies. The costs will be paid between 2015 and 2017, and the conserved water was credited to Metropolitan's intentionally-created surplus water account. In December 2013, Metropolitan and IID executed an agreement under which IID will pay half of Metropolitan's program costs, or \$2.5 million, in return for half of the project supplies, 23,750 acre-feet.
- In September 2017, Metropolitan executed agreements in support and continuation of a program to augment Metropolitan's Colorado River supply through international pilot projects in Mexico. Under the new set of agreements, Metropolitan's total share of costs are expected to be \$3.75 million for 27,275 acre-feet of project supplies. The costs will be paid in three parts, 2020, 2023, and 2026.
- In May 2019, Upper and Lower Basin Drought Contingency Plans (DCP) were executed and became effective. The Lower Basin DCP Agreement requires California, Arizona, and Nevada to store defined volumes of water in Lake Mead at specified lake levels. Pursuant to intrastate implementation agreements, Metropolitan will be responsible for 93 percent of California's DCP Contributions under the Lower Basin DCP. 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 the California may store in Lake Mead by 200,000 acre-feet, which Metropolitan will have the right to use. The Lower Basin DCP will be effective through 2026.
- Desert Water Agency/Coachella Valley Water District/Metropolitan Water Exchange and Advance Delivery Programs: Under these programs, Metropolitan delivers Colorado River water to the DWA and CVWD, in exchange for future deliveries by DWA and CVWD of an equal volume of their SWP supplies. By delivering enough water in advance to cover Metropolitan's exchange obligations, Metropolitan is able to receive DWA and CVWD's available SWP supplies in years in which Metropolitan's supplies are insufficient to deliver an equivalent amount of Colorado River water. In December 2019, the exchange agreements were amended to provide more flexibility and operational certainty for the parties involved. Additionally, under the amended agreement, Coachella and Desert in wet years pay a portion of Metropolitan's water storage management costs, up to a combined total of \$4 million per year¹.

¹ DWA has a SWP Table A contract right of 55,750 acre-feet per year and CVWD has a SWP Table A contract right of 138,350 acre-feet per year, for a total of 194,100 acre-feet per year. In addition to their Table A supplies, DWA and CVWD, subject to Metropolitan's written consent may by exchange take delivery of SWP supplies available under Article 21 of their SWP Contracts, the Turn-back Pool Program, and non-SWP supplies they may acquire and convey through SWP facilities. Under the Metropolitan-CVWD Delivery and Exchange Agreement for 35,000 Acre-feet, up to 35,000 acre-feet of Metropolitan's SWP Table A supply can be requested annually by CVWD for delivery by exchange.

Figure 13 shows the year-end balance in Metropolitan’s Colorado River storage programs. The combined capacity of the Lake Mead Storage program and the DWA/CVWD advance delivery program is 2,300,000 acre-feet, plus the amount of water in storage in Lake Mead as a result of the Drop 2 Reservoir and Yuma Desalting Plant system efficiency projects.

Figure 13: Colorado River Storage Programs, acre-feet



In addition to the supply programs developed by Metropolitan, Metropolitan entered into an exchange agreement with the San Diego County Water Authority (SDCWA). On April 29, 1998, SDCWA and IID executed an agreement (the “IID-SDCWA Transfer Agreement”) for SDCWA’s purchase from IID of Colorado River water that is conserved within IID. An amendment to the IID-SDCWA Transfer Agreement, executed as one of the QSA related agreements, set the maximum transfer amount at 205,000 acre-feet in 2021, with the transfer gradually ramping up to that amount over an 18 year period, then stabilizing at 200,000 acre-feet per year beginning in 2023.

No facilities currently exist to deliver water directly from IID to SDCWA. Accordingly, in 1998, SDCWA entered into an exchange agreement with Metropolitan, pursuant to which SDCWA would have made available to Metropolitan at Lake Havasu on the Colorado River the conserved IID Colorado River water acquired by SDCWA from IID. Metropolitan would have delivered to SDCWA an equal volume of water from Metropolitan’s supplies. The 1998 SDCWA-Metropolitan Exchange Agreement was conditioned upon the State Legislature’s appropriation of \$235 million to Metropolitan for lining the earthen All-American and Coachella Valley Canals to conserve water that would otherwise seep into the soil. Upon completion of the canal lining, Metropolitan had the rights to the estimated 77,700 acre-feet per year of conserved water for 110 years (Canal Lining Water).

In 2003, SDCWA and Metropolitan amended their exchange agreement, pursuant to which Metropolitan assigned the rights to the Canal Lining Water for 110 years and the \$235 million in state funding to SDCWA in exchange for SDCWA's agreement to pay for deliveries of Metropolitan water exchanged for the Canal Lining Water and IID transfer water based on the conveyance rates charged to Metropolitan's member agencies.

BUDGET HIGHLIGHTS

The budget for the Supply Programs increases over the budget period compared to FY 2019/20, primarily due to inflation and changing program utilization. This reflects the assumption of a 50 percent allocation on the SWP and approximately 733 to 745 TAF deliveries on the CRA.

This page intentionally left blank.

DEMAND MANAGEMENT

OVERVIEW

Demand Management costs are Metropolitan’s expenditures for funding local water resource development programs, water conservation programs and all the Future Supply Actions Program. These demand management programs incentivize the development of local water supplies, the conservation of water to reduce the reliance on imported water, and funding of programs focused on removing barriers to the development of local water supplies. These programs are implemented after the service connection between Metropolitan and its member agencies and, as such, do not add any water to the quantity Metropolitan obtains from other sources or to Metropolitan’s own supply. Rather, the effect of these downstream programs is to produce a local supply of water for the local agencies.

Demand management is an integral function of Metropolitan’s services to its member agencies. It is not a service provided to Metropolitan’s member agencies. Instead, it is a function undertaken to provide full-service water and wheeling service to Metropolitan’s member agencies. By undertaking demand management, Metropolitan avoids and defers the need to provide more water or wheeling service to its agencies, and accordingly, also avoids and defers additional costs associated with providing that additional water or wheeling service.

The budgeted costs for Demand Management are as follows:

Demand Management Cost Summary¹, \$ millions

| | 2018/19 Actuals | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|---|--------------------|-------------------|-------------------|---------------------------|-------------------|---------------------------|
| Conservation Program ² | \$16.6 | \$43.0 | \$43.0 | — | \$43.0 | — |
| Local Resources Program | \$30.9 | \$40.8 | \$19.3 | (\$21.6) | \$20.3 | \$1.1 |
| Future Supply Actions / Stormwater Pilot | \$0.9 | \$2.0 | \$4.3 | 2.3 | 7.1 | 2.9 |

¹ Does not include Departmental costs reflected elsewhere in this Budget.

² Appropriated, annual Conservation expenditures are estimated to be \$25M per year.

Budgeted Demand Management costs reflect the financial commitment for the Conservation Program, conservation messaging, and maintaining the financial incentives for existing contracts under the Local Resources Program.

In addition to Metropolitan’s own objectives, Metropolitan also pursues local water resource development because it has uniquely been directed to do so by the state Legislature. In 1999, then Governor Davis signed Senate Bill (SB) 60 (Hayden) into law. SB 60 amended the Metropolitan Water District Act to direct Metropolitan to increase conservation and local resource development. No other water utility in California, public or private, has been specifically identified by the state Legislature and directed to pursue water conservation and local water resource development.

Metropolitan’s Demand Management programs also support the region’s compliance with the requirements of AB 1668 and SB 606. These bills build on Governor Brown’s efforts to make water conservation a way of life in California and create a new foundation for long-term improvements in water conservation and drought

planning. They establish guidelines for efficient water use and a framework for the implementation and oversight of the new standards, which must be in place by 2022. The two bills strengthen the state's water resiliency in the face of future droughts with provisions that include:

- Establishing water use objectives and long-term standards for efficient water use that apply to urban retail water suppliers; comprised of indoor residential water use, outdoor residential water use, commercial, industrial and institutional (CII) irrigation with dedicated meters, water loss, and other unique local uses.
- Providing incentives for water suppliers to recycle water.
- Identifying small water suppliers and rural communities that may be at risk of drought and water shortage vulnerability and provide recommendations for drought planning.
- Requiring both urban and agricultural water suppliers to set annual water budgets and prepare for drought.

Metropolitan coordinates closely with its member agencies to achieve these provisions both at a retail agency level in compliance with legislative requirements and as a region.

Demand Management costs also support the Strategic Plan Policy Principles approved by Metropolitan's Board on December 14, 1999. These principles embody the Board's vision that Metropolitan is a regional provider of wholesale water services. In this capacity, Metropolitan is the steward of regional infrastructure and the regional planner responsible for coordinated drought management and the collaborative development of additional supply reliability and necessary capacity expansion. Through these regional services, Metropolitan ensures a baseline level of reliability and quality for service in its service area.

SB 60 DIRECTED METROPOLITAN TO EXPAND DEMAND MANAGEMENT PROGRAMS

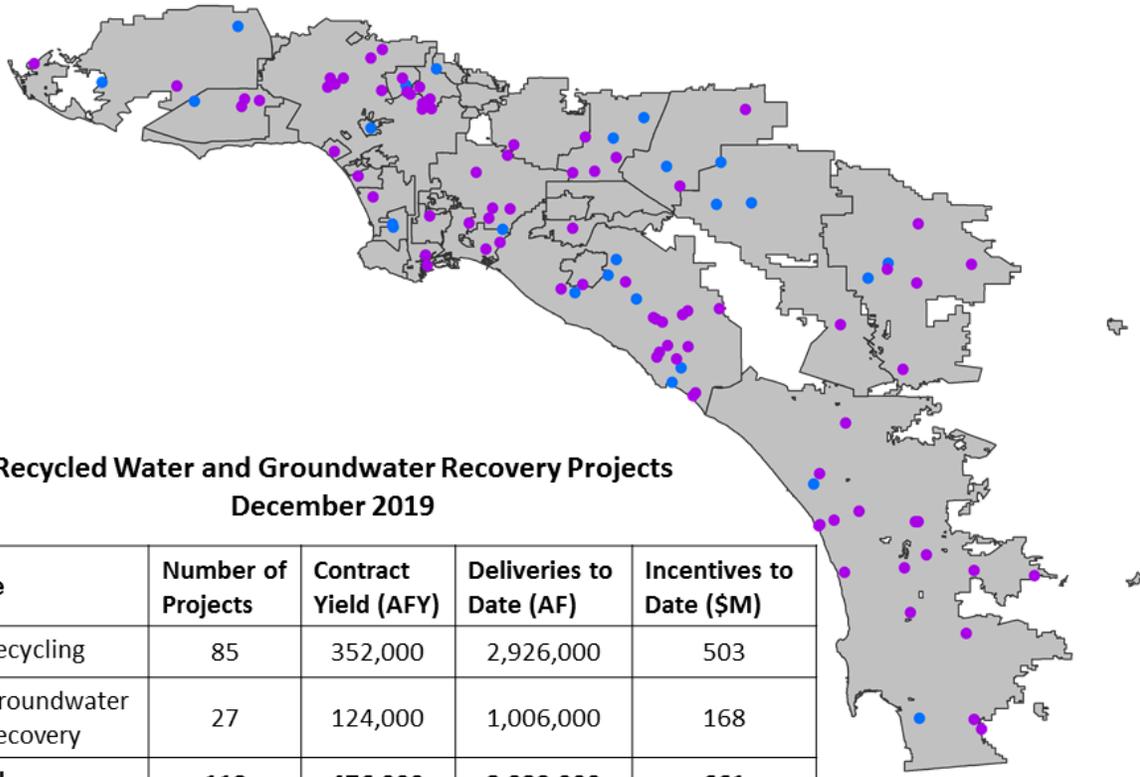
In September 1999, Governor Gray Davis signed SB 60 (Hayden) into law. SB 60 amended the Metropolitan Water District Act to direct Metropolitan to increase "sustainable, environmentally sound, and cost-effective water conservation, recycling, and groundwater storage and replenishment measures." SB 60 also requires Metropolitan to hold an annual public hearing to review its urban water management plan for adequacy in achieving an increased emphasis on cost-effective conservation and local water resource development, and to invite knowledgeable persons from the water conservation and sustainability fields to these hearings. Finally, Metropolitan is required to annually prepare and submit to the Legislature a report on its progress in achieving the goals of SB 60. SB 60 specifically indicated that no reimbursement was required by legislation because Metropolitan, as a local agency, has the authority to levy service charges, fees or assessments sufficient to pay for the program or level of service mandated by SB 60. No other water utility in California, public or private, has been specifically identified by the state Legislature and directed to pursue water conservation and local water resource development.

In FY 2018/19 alone, Metropolitan's service area achieved 1.6 million acre-feet of water savings from conservation, recycled water and groundwater recovery programs. The 1.6 million acre-feet of water savings from water management activities in fiscal year 2018/19 exceeded actual water transactions in the same period of 1.42 million acre-feet. These savings derived from programs for which Metropolitan paid incentives, as well as code-based conservation achieved through legislation, building and plumbing codes and ordinances, and reduced consumption resulting from changes in water pricing. Cumulatively, since 1982 Metropolitan has invested more than \$1.4 billion and Metropolitan's service area has achieved 6.9 million acre-feet of water savings.

Metropolitan’s Conservation Program provides incentives to residents and businesses for use of water-efficient products and qualified water-saving activities. Rebates have been provided to residential customers for turf removal and purchasing of high-efficiency clothes washers and toilets. Rebates are also provided to businesses and institutions for water-saving devices. In fiscal year 2018/19, the Conservation Program achieved 1.0 million acre-feet of saved water through new and existing conservation initiatives funded with incentives and maintained through plumbing codes. Cumulatively, through fiscal year 2018/19 the Conservation Program has achieved over 3.0 million acre-feet of water savings.

Metropolitan provides financial incentives through its Local Resources Program for the development and use of recycled water and recovered groundwater. The Local Resources Program consists of 85 recycling projects and 27 groundwater recovery projects located throughout Metropolitan’s service area. Under the program, there are a total of 112 projects in Operation. Since inception in 1982 through FY 2018/19, Metropolitan has provided about \$497 million in incentives to produce about 2.9 million acre-feet of recycled water and approximately \$164 million to recover 991,000 acre-feet of degraded groundwater for municipal use.

Local Resources Program Projects



**Recycled Water and Groundwater Recovery Projects
December 2019**

| Type | Number of Projects | Contract Yield (AFY) | Deliveries to Date (AF) | Incentives to Date (\$M) |
|------------------------|--------------------|----------------------|-------------------------|--------------------------|
| ● Recycling | 85 | 352,000 | 2,926,000 | 503 |
| ● Groundwater Recovery | 27 | 124,000 | 1,006,000 | 168 |
| Total | 112 | 476,000 | 3,932,000 | 661 |

BUDGET HIGHLIGHTS

The budget for the Demand Management costs is decreasing when comparing the Biennial Budget to FY 2019/20, due primarily to reduced expenditures for local resources programs as a result of the termination of some existing contracts. Historically, conservation activity peaks during years of shortfalls and diminishes during periods of wet years. The Demand Management is budgeted at \$48.5 million for FY 2020/21 and \$52.5 million in FY 2021/22.

The demand management budget is being funded this biennial period by the fiscal-year-end 2019/20 balance of the Water Stewardship Fund and the collection of the Water Stewardship Rate through the end of calendar year 2020. In April 2018, the Board directed staff to undertake a study to determine the most appropriate allocation of demand management costs. The Board also suspended the billing and collection of the Water Stewardship Rate from deliveries to SDCWA pursuant to the exchange agreement in 2018-2020. Staff undertook the cost allocation study with the help of two consultants. In December 2019, staff presented the recommendations for rate design alternatives to recover demand management costs. The Board did not select a rate design alternative and instead, directed staff to incorporate the 2019/20 fiscal-year-end balance of the Water Stewardship Fund to fund demand management costs for the next biennial period. The Water Stewardship Rate will also be collected through end of calendar year 2020, also providing funds for the Water Stewardship Fund. If the demand management program requires additional funding during the biennium budget period, the need for additional funding will be brought back to the Board.

DEVELOPMENTS

OVERVIEW

As of September 30, 2019, the northern Sierra precipitation was 136 percent of the 50-year average for the time of year. For the water year ended September 30, 2019, northern Sierra snow water content measured 163 percent of the 30-year seasonal peak average. On December 2, 2019, the DWR notified State Water Contractors that its initial calendar year 2020 allocation estimate of State Water Project water is 10 percent of contracted amounts, or 191,150 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 service area.) Changes to the 2020 allocation may occur and are dependent on the developing hydrologic conditions.

The Upper Colorado River Basin peak snowpack accumulation measured 133 percent of the 30-year seasonal peak average for the water year ended September 30, 2019. On October 11, 2019, the total system storage in the Colorado River Basin was 53 percent of capacity, an increase of six percent or 3.64 million acre-feet for the water year ended September 30, 2019. As of such date, the projected base supply of Colorado River water in calendar year 2020 was estimated to be 983,436 acre-feet.

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 SWP or CRA, is approximately 6.1 million acre-feet. In 2019, approximately 626,000 acre-feet of total stored water in Metropolitan's reservoirs and other storage resources was designated as emergency storage that was reserved for use in the event of supply interruptions from earthquakes or similar emergencies, as well as extended drought. 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 SWP 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. As a result of increased SWP supplies and reduced demands from 2016 to 2019, Metropolitan's storage as of January 1, 2019 is estimated to be 2.98 million acre-feet. Due to the relatively higher SWP allocation in 2019 and improving conditions on the Colorado River, Metropolitan expects January 1, 2020 storage to be approximately 4.0 million acre-feet. As a result of a collaborative process between Metropolitan and its member agencies to evaluate Metropolitan's Emergency Storage Objective, by January 1, 2020 the total emergency storage in Metropolitan's reservoirs and other storage resources will be increased from 626,000 acre-feet to 750,000 acre-feet.

Delta Conveyance

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 (California WaterFix) as a stand-alone project with the required habitat restoration limited to that directly related to construction mitigation. The associated costs of such mitigation would be underwritten by the public water agencies participating in the conveyance 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 conveyance project or permits. As part of California EcoRestore, which was initiated in 2015, the State is pursuing more than 30,000 acres of Delta habitat restoration. Work on a number of EcoRestore projects is ongoing. Among other things,

EcoRestore is expected to implement restoration projects required by the biological opinions issued in 2008 and 2009 to which the SWP is subject. EcoRestore is estimated to cost \$300 million in the first four years, and includes amounts being paid by the State Water Contractors, including Metropolitan, for the costs of habitat restoration required to mitigate State and federal water project impacts pursuant to the biological opinions.

In July 2017, DWR certified a final EIR and approved the California WaterFix as an improvement to the SWP. On February 12, 2019, then recently elected Governor Gavin Newsom presented at the State of the State address a conceptual proposal supporting a single-tunnel configuration for new Bay-Delta conveyance instead of the two-tunnel California WaterFix. Subsequently, on April 29, 2019, Governor Newsom issued an executive order directing identified State agencies to develop a comprehensive statewide strategy to build a climate-resilient water system. Among other things, the Governor's executive order directed the State agencies to inventory and assess the current planning for modernizing conveyance through the Bay-Delta with a new single tunnel project. Following the Governor's executive order, in May 2019, DWR withdrew approval of the California WaterFix project and decertified the EIR. In August 2019, DWR terminated the last permit associated with the project.

DWR is pursuing a new environmental review and planning process for a single tunnel project to modernize the State Water Project's Bay-Delta conveyance. The formal environmental review process is expected to begin with a Notice of Preparation under CEQA anticipated to be issued by DWR in the late 2019 timeframe. Planning, environmental review and conceptual design work by DWR for a proposed single tunnel project is expected to take approximately 18 to 36 months. A single tunnel project to be proposed under the new planning effort and environmental review process to be undertaken by DWR may be designed and configured differently than previously analyzed single tunnel alternatives. Information regarding the Delta conveyance project is located on Metropolitan's website at <http://www.mwdh2o.com/DocSvcPubs/DeltaConveyance/index.html>.

Regional Recycled Water Program

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 a regional recycled water program (the "RRWP"). The objectives of the RRWP are to enable the potential reuse of up to 150 million gallons per day (mgd) of treated effluent from LACSD's Joint Water Pollution Control Plant (JWPCP). 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. Construction of a 0.5 mgd advanced water treatment demonstration plant was approved in 2017 and was completed in August 2019. Testing and operation of the plant to confirm treatment costs and provide the basis for regulatory approval of the proposed treatment process and technical recommendations concerning design, operation, and optimization of the full-scale RRWP will be completed in 2020. The RRWP will have the flexibility to be expanded in the future to implement Direct Potable Reuse (DPR) through raw water augmentation at the two Metropolitan treatment plants. The State Water Resources Control Board Division of Drinking Water is in the process of developing a framework for the regulation of DPR in California, and the current anticipated date for promulgation is 2023. Information regarding the RRWP is located on Metropolitan's website at <http://www.mwdh2o.com/DocSvcPubs/rrwp/index.html#home>.

CAPITAL FINANCING

OVERVIEW

Capital financing costs are Metropolitan’s expenditures for revenue bond debt service, General Obligation bond debt service, debt administration costs, and the funding of capital expenditures from current operating revenues, or Pay-As-You-Go (PAYGO).

The budgeted costs for capital financing are as follows:

Capital Financing Cost Summary, \$ millions

| | 2018/19 Actuals | 2019/20 Budget | 2020/21 Budget | Change from 2019/20 | 2021/22 Budget | Change from 2020/21 |
|--|--------------------|-------------------|-------------------|---------------------------|-------------------|---------------------------|
| Debt Service, net of BABs Reimbursement | \$280.9 | \$309.6 | \$285.8 | (\$23.9) | \$292.7 | \$6.9 |
| GO Bond Debt Service | 13.5 | 14.3 | 7.3 | (7.1) | 8.2 | 1.0 |
| Debt Administration | 5.7 | 6.9 | 5.7 | (1.3) | 6.1 | 0.4 |
| PAYGO | 128.1 | 120.0 | 110.0 | (10.0) | 135.0 | 25.0 |
| Total¹ | \$428.2 | \$450.9 | \$408.7 | (\$42.2) | \$442.0 | \$33.3 |

¹ Does not include Departmental costs reflected elsewhere in this Budget.

Budgeted amounts for Capital Financing represent the expenditures for existing and future debt service, anticipated debt administration costs to support the debt portfolio, and PAYGO amounts to support the Capital Investment Plan. Metropolitan generally incurs long-term debt to finance projects or purchase assets which will have useful lives equal to or greater than the related debt. Revenue supported debt can be authorized by Metropolitan’s Board of Directors.

CAPITAL INVESTMENT PLAN

The Capital Investment Plan (CIP) expenditures for FY 2020/21 and FY 2021/22 which includes Minor Capital Projects are estimated to be \$425 million. They are funded by current operating revenues (PAYGO) and revenue bond proceeds. The FY 2020/21 CIP expenditures are unchanged from the FY 2019/20 budget, and for FY 2021/22, \$25 million higher than the FY 2020/21 budget. The largest areas of expenditures in the Biennial Budget are infrastructure refurbishment and replacement and infrastructure upgrades.

The CIP planned spending as developed by Engineering Services and presented in the Capital Expenditures section of the budget is estimated to be \$500 million over the biennium. The budget assumes that CIP expenditures will be 80% of planned spending of \$250 million, or \$200 million, in FY 2020/21. In FY 2021/22, CIP expenditures are assumed to be 90% of planned spending of \$250 million or \$225 million. Estimated CIP expenditures are anticipated to be lower in the first year of the biennium as a result of the impact of the COVID-19 crisis on project schedules.

PAYGO Percentage of Funding, \$ millions

| | 2019/20 Budget | 2020/21 Budget | 2021/22 Budget |
|---|-------------------|-------------------|-------------------|
| Capital Investment Plan expenses ¹ | \$200.0 | \$200.0 | \$225.0 |
| Project Funding: | | | |
| New Bond Issues | 80.0 | 90.0 | 90.0 |
| Prior Bond Funds/Construction Fund | — | — | — |
| Grants and Loans Funds | — | — | — |
| Operating Revenues (PAYGO) | 120.0 | 110.0 | 135.0 |
| PAYGO Percentage of Funding | 60.0% | 55.0% | 60.0% |

¹ CIP appropriation is \$500M over the biennium. Estimated CIP expenditures are estimated to be \$225M per year.

In FY 2020/21 and FY 2021/22, the percentage of capital that is funded by operating revenues is set at 60% consistent with the FY 2018/19 and FY 2019/20 ten-year forecast for this time period. The projected percentage of capital funded from operating revenues will range from 55 percent to 70 percent over the ten years of the long-range forecast.

OUTSTANDING DEBT

Metropolitan has total debt outstanding of \$4.0 billion as of December 31, 2019. Metropolitan’s debt issues are summarized below and discussed in detail thereafter.

Outstanding Debt, \$'s, as of December 31, 2019

| Issue | Debt Outstanding |
|--|----------------------|
| 1993 Series A, Water Revenue Refunding Bonds | 12,225,000 |
| 2000 Authorization, Series B-3, Water Revenue Bonds (1) | 88,800,000 |
| 2010 Authorization, Series A, Water Revenue Bonds (2) | 250,000,000 |
| 2010 Series B, Water Revenue Refunding Bonds | 56,005,000 |
| 2011 Series B, Water Revenue Refunding Bonds | 1,345,000 |
| 2011 Series C, Water Revenue Refunding Bonds | 118,800,000 |
| 2012 Series A, Water Revenue Refunding Bonds | 181,180,000 |
| 2012 Series C, Water Revenue Refunding Bonds | 19,835,000 |
| 2012 Series F, Water Revenue Refunding Bonds | 48,885,000 |
| 2012 Series G, Water Revenue Refunding Bonds | 111,890,000 |
| 2013 Series D, Special Variable Rate Water Revenue Refunding Bonds (1) | 87,445,000 |
| 2014 Series A, Water Revenue Refunding Bonds | 37,870,000 |
| 2014 Series C-2, Water Revenue Refunding Bonds | 14,020,000 |
| 2014 Series C-3, Water Revenue Refunding Bonds | 2,810,000 |
| 2014 Series D, Special Variable Rate Water Revenue Refunding Bonds (1) | 38,465,000 |
| 2014 Series E, Water Revenue Refunding Bonds | 86,060,000 |
| 2014 Series G-5, Water Revenue Refunding Bonds | 6,205,000 |
| 2015 Authorization, Series A, Water Revenue Bonds | 204,120,000 |
| 2015 Series A-1, Special Variable Rate Water Revenue Refunding Bonds (1) | 94,450,000 |
| 2015 Series A-2, Special Variable Rate Water Revenue Refunding Bonds (1) | 94,450,000 |
| 2016 Series A, Water Revenue Refunding Bonds | 239,455,000 |
| 2016 Authorization, Series A, Subordinate Water Revenue Bonds (Taxable) (1) | 175,000,000 |
| 2016 Series B-1, Special Variable Rate Water Revenue Refunding Bonds (1) | 51,835,000 |
| 2016 Series B-2, Special Variable Rate Water Revenue Refunding Bonds (1) | 51,835,000 |
| 2017 Series A, Authorization Water Revenue Bonds (1) | 80,000,000 |
| 2017 Series A, Subordinate Water Revenue Refunding Bonds | 238,015,000 |
| 2017 Series B, Subordinate Water Revenue Refunding Bonds | 178,220,000 |
| 2017 Series C, Subordinate Water Revenue Bonds (1) | 80,000,000 |
| 2017 Series D, Subordinate Water Revenue Refunding Bonds (1) | 95,630,000 |
| 2017 Series E, Subordinate Water Revenue Refunding Bonds (1) | 95,625,000 |
| 2018 Series A, Subordinate Water Revenue Refunding Bonds | 94,675,000 |
| 2018 Series A-1, Special Variable Rate Water Revenue Refunding Bonds (1) | 104,935,000 |
| 2018 Series A-2, Special Variable Rate Water Revenue Refunding Bonds (1) | 104,935,000 |
| 2018 Series B, Subordinate Water Revenue Bonds | 64,345,000 |
| 2018 Series B, Water Revenue Refunding Bonds | 137,485,000 |
| 2019 Series A, Water Revenue Refunding Bonds | 218,090,000 |
| 2019 Series A, Subordinate Water Revenue Refunding Bonds | 241,530,000 |
| Total Revenue Bonds | 3,806,470,000 |
| 2010 Series A, WaterWorks General Obligation Refunding Bonds | 18,735,000 |
| 2014 Series A, WaterWorks General Obligation Refunding Bonds | 12,560,000 |
| 2015 Series A, WaterWorks General Obligation Refunding Bonds | 16,755,000 |
| Total General Obligation Bonds | 48,050,000 |
| Subordinate Short-Term Revenue Refunding Certificates, Series 2019 A (Taxable) | 46,800,000 |
| 2019 Short-Term Revolving Credit Facility Notes (1) | 100,000,000 |
| Total Revolving Note Program | 146,800,000 |
| Total Debt: | 4,001,320,000 |

(1) Outstanding variable rate obligation.

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

DEBT SERVICE

Debt Service payments in FY 2020/21 are budgeted at \$298.7 million and includes \$7.3 million in General Obligation bond debt service, \$285.8 million in revenue bond debt service, and \$5.7 million for debt administration costs.

Debt Service payments in FY 2021/22 are budgeted at \$307.0 million and include \$8.2 million in General Obligation bond debt service, \$292.7 million in revenue bond debt service, and \$6.1 million for debt administration costs. Total debt service costs in FY 2021/22 are expected to be \$8.3 million greater than the FY 2020/21 payments. Interest payments on synthetic fixed rate debt were calculated at their associated swap rates. Interest rates on variable rate debt were calculated at 1.70 percent for FY 2020/21 and FY 2021/22.

Outstanding variable rate debt on December 31, 2019 was approximately \$1,390.2 million, including bonds bearing interest in the Index Mode, special variable rate bonds initially designated as self-liquidity bonds, variable rate demand obligations, and revolving note programs. Of the \$1,390.2 million, \$493.6 million are treated by Metropolitan as fixed rate debt by virtue of interest rate swap agreements. The remaining \$896.6 million of variable rate obligations represent approximately 22.7 percent of total outstanding water revenue bonds and revolving notes.

Going forward, Metropolitan will finance a portion of its construction program through issuance of fixed-rate debt. Metropolitan intends to issue approximately \$90 million of new debt in FY 2020/21 and FY 2021/22, respectively.

DEBT RATINGS

Credit risk is the risk that a financial loss will be incurred if a counterparty to a transaction does not fulfill its financial obligations in a timely manner. This is measured by the assignment of a rating by a nationally recognized statistical credit rating organization. Strong credit ratings provide tangible benefits to ratepayers in the form of reduced debt service cost. A strong credit rating provides better access to capital markets, lower interest rates and better terms on debt, and access to a greater variety of debt products. Prudent financial management policies have resulted in Metropolitan's senior lien bond ratings of AAA from Standard & Poor's, Aa1 from Moody's, and AA+ from Fitch.

DEBT POLICY AND COVERAGE

Metropolitan is subject to limitations on additional revenue bonds. Resolution 8329 (the "Master Revenue Bond Resolution"), adopted by Metropolitan's Board in 1991 and subsequently supplemented and amended, provides for the issuance of Metropolitan's revenue bonds. The Master Revenue Bond Resolution limits the issuance of additional obligations payable from Net Operating Revenues, among other things, through the requirement that Metropolitan must meet an Additional Bonds Test, as defined in the Master Revenue Bond Resolution. Metropolitan's Master Subordinate Bond Resolution, Resolution 9199, adopted by the Board in March 2016, and subsequently supplemented and amended, also incorporates limitations on additional revenue bonds.

The Metropolitan Act also provides two additional limitations on indebtedness. The Act provides for a limit on general obligation bonds, water revenue bonds and other indebtedness at 15 percent of the assessed value of all taxable property within Metropolitan's service area. As of December 31, 2019, outstanding general obligation bonds, water revenue bonds and other evidences of indebtedness in the amount of \$4.0 billion represented approximately 0.13 percent of the FY 2019/20 taxable assessed valuation of \$3,092 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 the bonds equals at least 100 percent of the aggregate amount of revenue bonds outstanding following the issuance of the bonds. The net position of Metropolitan at June 30, 2019 was \$6.8 billion. The aggregate amount of revenue bonds outstanding as of December 31, 2019 was \$3.8 billion.

Metropolitan has also established its own policy regarding debt management. The purpose is to maintain a balance between current funding sources and debt financing to retain Metropolitan's financing flexibility. Flexibility allows Metropolitan to use a variety of revenue or debt-financing alternatives, including issuing low-cost variable rate and other revenue supported obligations.

Metropolitan's debt management policy is to:

- Maintain an annual senior/subordinate lien revenue bond debt coverage ratio of at least 2.0 times coverage;
- Maintain an annual fixed charge coverage ratio of at least 1.2 times coverage;
- Limit debt-funded capital to no more than 40 percent of the total capital program over the ten-year planning period; and
- Limit variable rate debt such that the net interest cost increase due to interest rate changes is no more than \$5 million, and limit the maximum amount of variable rate bonds to 40 percent of outstanding revenue bond debt (excluding variable rate bonds associated with interest rate swap agreements).

In order to comply with the debt management policy, Metropolitan has taken the following measures:

Revenue Bond Debt Coverage Ratio

This policy ensures that Metropolitan has sufficient annual operating revenues to pay its operating expenses and meet its debt service obligations on its revenue bonds and other senior debt. The revenue bond debt coverage ratio is defined as Metropolitan's net operating revenue (current year's operating revenue less the current year's operating expenses) divided by the current year's senior/subordinated lien debt service on all revenue bonds and other senior debt. The target is 2.0 times. In FY 2020/21 and FY 2021/22, the projected debt coverage ratio is 1.5 and 1.5 times, respectively.

Fixed Charge Coverage Ratio

In addition to revenue bond debt service coverage, Metropolitan also measures total coverage of all fixed obligations after payment of operating expenditures. This additional measure is used to account for Metropolitan's recurring capital costs for the State Water Contract, which are funded after debt service on revenue bonds and other parity obligations. Rating agencies expect that a financially sound utility consistently demonstrate an ability to fund all recurring costs, whether they are operating expenditures, debt service payments or other contractual payments. Metropolitan's fixed charge coverage ratio target is 1.2 times. In FY 2020/21 and FY 2021/22, the projected fixed charge coverage ratio is 1.5 and 1.5, respectively. These levels help maintain favorable credit ratings and access to the capital markets at low cost.

BUDGET HIGHLIGHTS

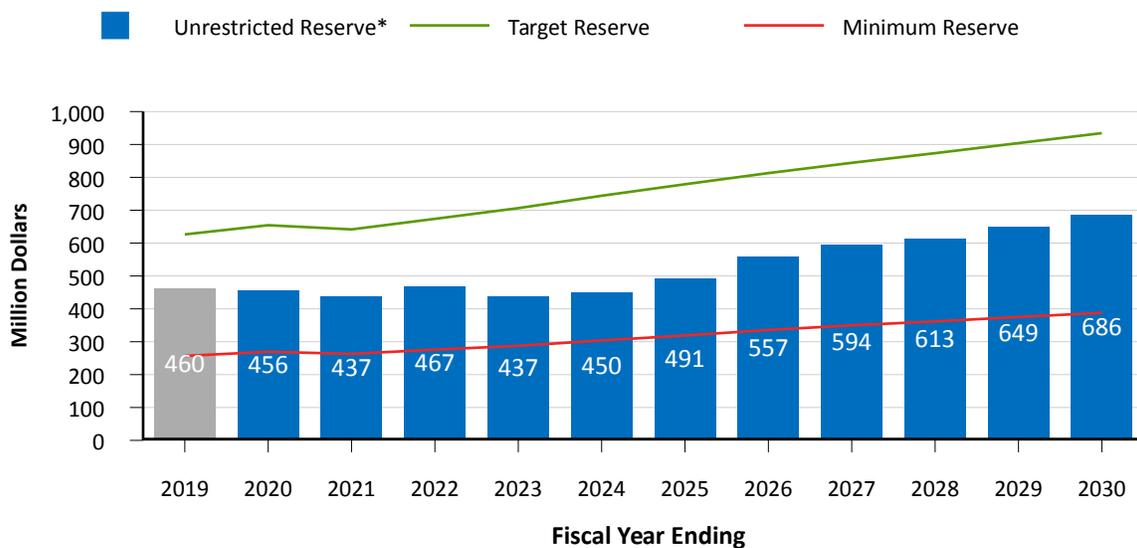
The FY 2020/21 and FY 2021/22 Capital Financing budget is decreasing from the FY 2019/20 budget due to lower debt service expenditures overall. Debt service costs decrease by \$24 million over the biennium compared to the FY 2019/20 budget primarily as a result of favorable refundings. Lower overall Capital Financing costs provide increased financial flexibility and resiliency.

This page intentionally left blank.

TEN-YEAR FINANCIAL FORECAST

The ability to ensure a reliable supply of high quality water for Metropolitan’s 26 member agencies depends on Metropolitan’s ongoing ability to fund operations and maintenance, maintain and augment local and imported water supplies, fund replacements and refurbishment of existing infrastructure, and invest in system improvements. This ten-year forecast builds on the biennial budget to support long range resource, capital investment and operational planning. As such, it includes a forecast of future costs and the revenues necessary to support operations and investments in infrastructure and resources that are derived from Metropolitan’s planning processes while conforming to Metropolitan’s financial policies. These financial policies, which address reserve levels, financial indicators, and capital funding strategies, ensure sound financial management and fiscal stability for Metropolitan. The Ten-Year Financial Forecast is updated with every budget to reflect the most up-to-date planning assumptions and projections.

Projected Financial Indicators



| | | | | | | | | | | | | |
|----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Ave Rate Increase | 3.0% | 3.0% | 3.0% | 4.0% | 5.0% | 5.0% | 4.0% | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% |
| Water Transactions** (MAF) | 1.42 | 1.55 | 1.60 | 1.60 | 1.60 | 1.64 | 1.69 | 1.74 | 1.74 | 1.74 | 1.75 | 1.75 |
| Rev. Bond Cvg | 1.4 | 1.5 | 1.5 | 1.5 | 1.5 | 1.7 | 2.0 | 2.1 | 2.1 | 2.1 | 2.2 | 2.3 |
| Fixed Chg Cvg | 1.4 | 1.4 | 1.5 | 1.5 | 1.5 | 1.7 | 1.9 | 1.9 | 1.8 | 1.6 | 1.7 | 1.7 |
| PAYGO, \$M | 128 | 30 | 110 | 135 | 180 | 180 | 210 | 210 | 210 | 210 | 210 | 210 |

* includes Revenue Remainder and Water Rate Stabilization Fund

** includes water sales, exchanges and wheeling

The figure above summarizes the financial metrics of the Ten-Year Financial Forecast. Metropolitan projects that the fixed charge coverage ratio will meet the board-established target of 1.2 times throughout the ten-year period. Revenue bond coverage will meet the target of 2.0 times beginning in FY 2024/25. Reserve levels will

be above minimums as established by board policy; PAYGO expenditures will range to fund between 55 percent and 70 percent of the Capital Investment Plan (CIP) expenditures; and projected overall rate increases are expected to range between 3 to 5 percent.

The estimated overall rate increases for the ten-year forecast is a result of increases in operating and maintenance costs, higher State Water Contract (SWC) costs, higher capital financing costs, increased costs for demand management, and higher power costs for the State Water Project (SWP) and Colorado River Aqueduct (CRA). Annual expenditures are expected to increase from \$1.8 billion in FY 2020/21 to \$2.5 billion by FY 2029/30, or an annual average increase of about 4 percent. During this same period, capital investments are expected to be about \$2.8 billion. To finance these capital investments, the ten-year forecast anticipates funding \$1.9 billion of the CIP from water revenues or PAYGO. The balance of the CIP, or \$1.0 billion, will be financed by issuing revenue bond debt, either fixed or variable.

Planning is necessary for Metropolitan to successfully fund the many investments necessary to meet the challenges facing the region over the next ten years with manageable rate increases. Among the more significant challenges are:

- Investing in the elements of the 2015 IRP Update and the anticipated 2020 IRP Update to ensure reliable water supplies for Metropolitan's service area and preparing for uncertainty.
- Continuing to provide supply reliability through a diversified portfolio of actions to stabilize and maintain imported supplies.
- Meeting future growth through increased water conservation and the development of new local supplies, while protecting existing supplies, to achieve higher retail water use efficiency, in compliance with state policy.
- Building storage in wet and normal years to manage risks and drought.
- Funding an estimated \$2.8 billion capital program that provides projects meeting water quality, reliability, stewardship and information technology directives.
- Funding for Metropolitan's planned contribution for Delta conveyance project planning costs of \$100 million are included in the years FY 2021 through FY 2023. The focus over the next two years will be supporting the California Department of Water Resources as it seeks permits for a Delta conveyance project; participating in the Delta Conveyance Design and Construction Authority; and continuing to put forward sound scientific research to help inform and improve Delta management decisions. If staff determines that Metropolitan's appropriate contribution toward planning activities should exceed the amount included in the Biennial Budget for FY 2021 and 2022, the General Manager will request authorization from the Board for additional funding. Metropolitan's planning contribution for FY 2023 will be considered with the next biennial budget to be considered in FY 2022. Long-term costs for a Delta conveyance project have not been included in the forecast. At a later date staff will recommend that the Board separately consider Metropolitan's participation in a new Delta conveyance project after project planning has progressed further.
- Funding for the proposed Regional Recycled Water Program of \$30 million for preparation of a programmatic environmental impact report is included in FY2021 and FY2022. This is the next step before the Board will be fully informed and ready to make a decision on if, how, and when to proceed with further investments in this project. Long-term costs of the RRWP have not been included in the forecast.

ASSUMPTIONS FOR THE TEN-YEAR FORECAST

The following table summarizes key assumptions that underlie the ten-year forecast.

| Fiscal Year Ending | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Water Transactions, MAF * | 1.60 | 1.60 | 1.60 | 1.64 | 1.69 | 1.74 | 1.74 | 1.74 | 1.75 | 1.75 |
| CRA Diversions, TAF | 745 | 733 | 764 | 991 | 982 | 982 | 991 | 980 | 980 | 980 |
| SWP allocation, % | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% | 50% |
| CIP, \$M | 200 | 225 | 300 | 300 | 300 | 300 | 300 | 300 | 300 | 300 |
| PAYGO, \$M | 110 | 135 | 180 | 180 | 210 | 210 | 210 | 210 | 210 | 210 |
| Interest on investments, % | 1.50% | 1.50% | 1.50% | 1.50% | 1.50% | 1.50% | 1.50% | 1.50% | 1.50% | 1.50% |
| Interest rate, fixed bonds, % | 3.70% | 3.70% | 4.00% | 4.00% | 4.50% | 4.50% | 4.50% | 4.50% | 4.50% | 4.50% |
| Interest rate, variable bonds, % | 1.70% | 1.70% | 1.70% | 1.70% | 1.70% | 1.70% | 1.70% | 1.70% | 1.70% | 1.70% |

* includes water sales, exchanges, and wheeling

Metropolitan’s principal sources of water supplies are the SWP and the Colorado River. Metropolitan receives water delivered from the SWP under SWC provisions, including Table A allocation, 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. The Supply Programs supplement these SWP and Colorado River supplies. The SWP and Colorado River sources derive from two different hydrologic regions, which have helped buffer shortages. The ten-year forecast assumes an average hydrology on both regions. Together with Metropolitan’s Supply Programs, dry periods in either region can be managed.

The CIP has been reviewed to maintain affordability throughout the ten-year period. CIP projects have been carefully reviewed, scored and ranked to continue the ability to deliver water reliably and safely while meeting all regulatory requirements.

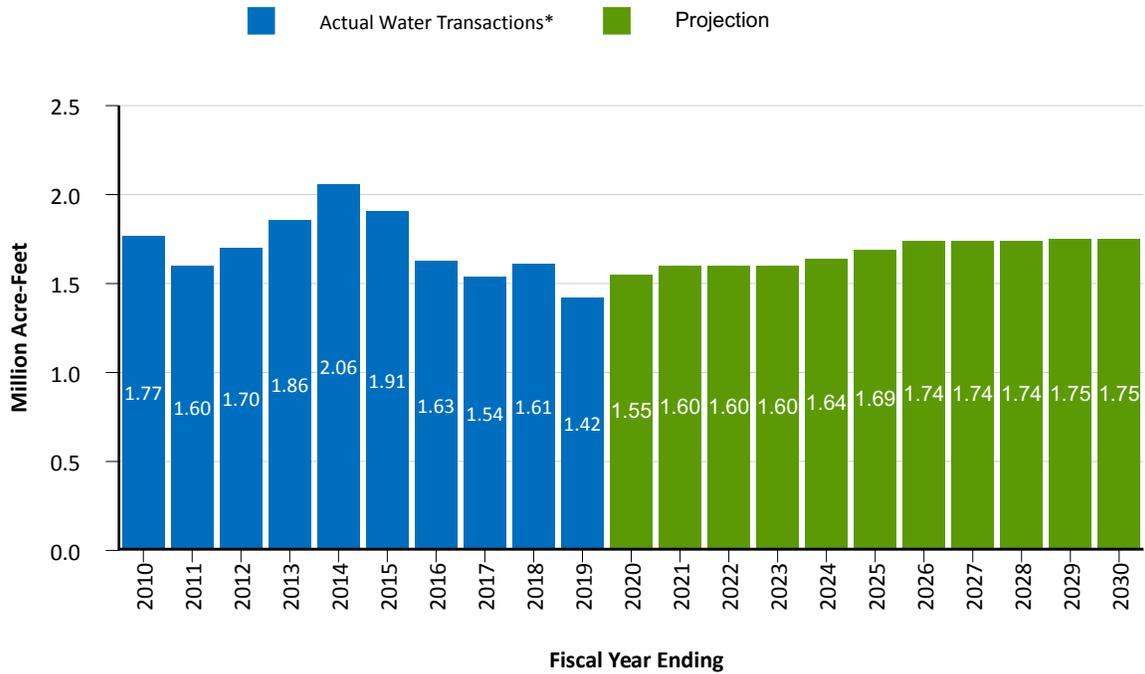
The inflation factor is based on forecasts by economists and is applied to Metropolitan’s O&M expenses, such as chemicals, but excluding labor and additives, which are based on the Memoranda of Understanding for the represented employees. The interest rate applicable to Metropolitan’s investment portfolio is based on an analysis of the current forward curve for investments over a ten-year period. This interest rate forecast informs the interest rate applicable to variable rate bonds. The interest rate for fixed rate bonds is also based on forecasts.

FORECAST OF WATER TRANSACTIONS

Revenues from water transactions (sales, exchanges, and wheeling) provide approximately 80 percent of the revenues necessary to support Metropolitan’s capital and operating costs. The 2015 IRP Update and recent recalibrations by Water Resource Management provides the basis for the water transactions forecast over the ten years. It is expected that demand for Metropolitan supplies will increase over the ten-year period, from 1.60 million acre-feet in FY 2020/21 to 1.75 million acre-feet by FY 2029/30. This forecast includes the exchange water delivered to the San Diego County Water Authority (SDCWA) pursuant to the 2003 Amended and Restated Exchange Agreement (exchange water). The 2015 IRP Update contemplates continued investment in local resources and retail and regional conservation measures to meet state policy regarding water use efficiency. Under the 2015 IRP Update, conservation and water efficiency initiatives will result in reductions of regional water use to the targets, which reflect efforts to meet state policies enacted to make conservation a way of life in California. Local resource augmentation will result in additional local supply, including production already anticipated from existing programs. These local supplies and increased conservation and water use efficiency reduce demand on Metropolitan and the need for Metropolitan to import additional water.

The figure below shows historic and forecast water transactions, including the exchange water and wheeling.

Water Transactions, MAF



* includes water sales, exchanges, and wheeling

SOURCES OF FUNDS

Revenues

Through FY 2029/30, revenues from rates and charges, which include the Readiness-to-Serve (RTS) Charge, Capacity Charge, and water transaction revenues, collected from the member agencies will account for approximately 91 percent of total revenues. Total revenues are projected to increase from about \$1.8 billion in FY 2020/21 to \$2.6 billion in FY 2029/30. This increase is almost entirely attributed to increases in water rates and charges.

Water Rates and Charges

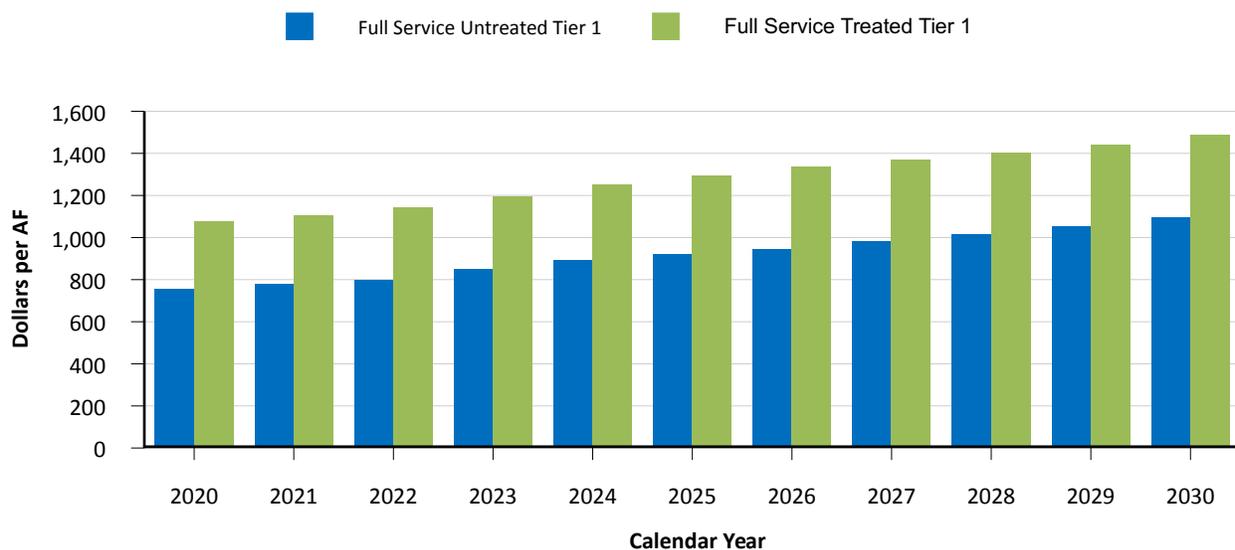
The table below shows the estimated unbundled water rates and charges under the current rate structure. Components of the rate structure may increase at different rates depending on the costs recovered. The full-service treated Tier 1 water rate is estimated to be \$1,486 per acre-foot by January 1, 2030, compared to \$1,078 per acre-foot on January 1, 2020, an average increase of 3.3 percent per year over the ten-year period.

| Rates & Charges Effective January 1st | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--|---------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Tier 1 Supply Rate (\$/AF) | \$208 | \$243 | \$243 | \$243 | \$243 | \$243 | \$247 | \$250 | \$260 | \$269 | \$278 |
| Tier 2 Supply Rate (\$/AF) | \$295 | \$285 | \$285 | \$285 | \$285 | \$285 | \$285 | \$285 | \$285 | \$285 | \$285 |
| System Access Rate (\$/AF) | \$346 | \$373 | \$389 | \$389 | \$406 | \$428 | \$441 | \$459 | \$478 | \$499 | \$518 |
| Water Stewardship Rate (\$/AF) | \$65 | \$— | \$— | \$53 | \$65 | \$71 | \$73 | \$79 | \$82 | \$84 | \$89 |
| System Power Rate (\$/AF) | \$136 | \$161 | \$167 | \$167 | \$178 | \$181 | \$185 | \$192 | \$193 | \$200 | \$211 |
| Full Service Untreated Volumetric Cost (\$/AF) | | | | | | | | | | | |
| Tier 1 | \$755 | \$777 | \$799 | \$852 | \$892 | \$923 | \$946 | \$980 | \$1,013 | \$1,052 | \$1,096 |
| Tier 2 | \$842 | \$819 | \$841 | \$894 | \$934 | \$965 | \$984 | \$1,015 | \$1,038 | \$1,068 | \$1,103 |
| Treatment Surcharge (\$/AF) | \$323 | \$327 | \$344 | \$344 | \$361 | \$373 | \$390 | \$390 | \$390 | \$390 | \$390 |
| Full Service Treated Volumetric Cost (\$/AF) | | | | | | | | | | | |
| Tier 1 | \$1,078 | \$1,104 | \$1,143 | \$1,196 | \$1,253 | \$1,296 | \$1,336 | \$1,370 | \$1,403 | \$1,442 | \$1,486 |
| Tier 2 | \$1,165 | \$1,146 | \$1,185 | \$1,238 | \$1,295 | \$1,338 | \$1,374 | \$1,405 | \$1,428 | \$1,458 | \$1,493 |
| Readiness-to-Serve Charge (\$M) | \$136 | \$130 | \$140 | \$140 | \$143 | \$155 | \$163 | \$166 | \$177 | \$179 | \$179 |
| Capacity Charge (\$/cfs) | \$8,800 | \$10,700 | \$12,200 | \$12,200 | \$14,400 | \$15,400 | \$15,300 | \$16,000 | \$16,000 | \$16,000 | \$16,000 |

*Water Stewardship Rate applies to CY 2020 and will not be collected in CYs 2021 and 2022. The volumetric rates shown for CYs 2023-2030 represent a placeholder until the Board approves a method to recover demand management costs from CY 2023 forward.

In 2021 and 2022, the Water Stewardship Rate is not included in the ten-year projection of rates and charges, as a result of Metropolitan’s Board action in December 2019. The Board directed staff: (1) to incorporate the use of the 2019/20 fiscal-year-end balance of the Water Stewardship Fund to fund all demand management costs in the FY 2020/21 and 2021/22 biennial budget; and (2) to not incorporate the Water Stewardship Rate, or any other rates or charges to recover demand management costs, with the rates and charges for CYs 2021 and 2022. Therefore, in those two years, the full-service rate will not include the Water Stewardship Rate element and the rate for wheeling service will be inapplicable. It is anticipated that Metropolitan will undergo a rate structure review over the next biennium period and as a result the costs of demand management will be recovered through a different method replacing the Water Stewardship Rate, potentially in connection with an updated rate structure. The following figure shows the volumetric cost per acre-foot for Tier 1 Full Service untreated water and Tier 1 Full Service treated water.

Volumetric Cost, \$ AF



Property tax revenue is expected to increase from \$139.9 million in FY 2020/21 to 156.4 million in FY 2029/30. This projection assumes the Board maintains the ad valorem tax rate at 0.0035 percent of assessed valuations, by determining the inapplicability of MWD Act Section 124.5, and assessed value increases by 2.5 percent per year. Property tax revenue is used to pay Metropolitan’s general obligation bonds and a portion of the SWC capital costs. By FY 2022/23 almost all of the revenues will be used to pay SWC costs as voter-approved general obligation bonds mature.

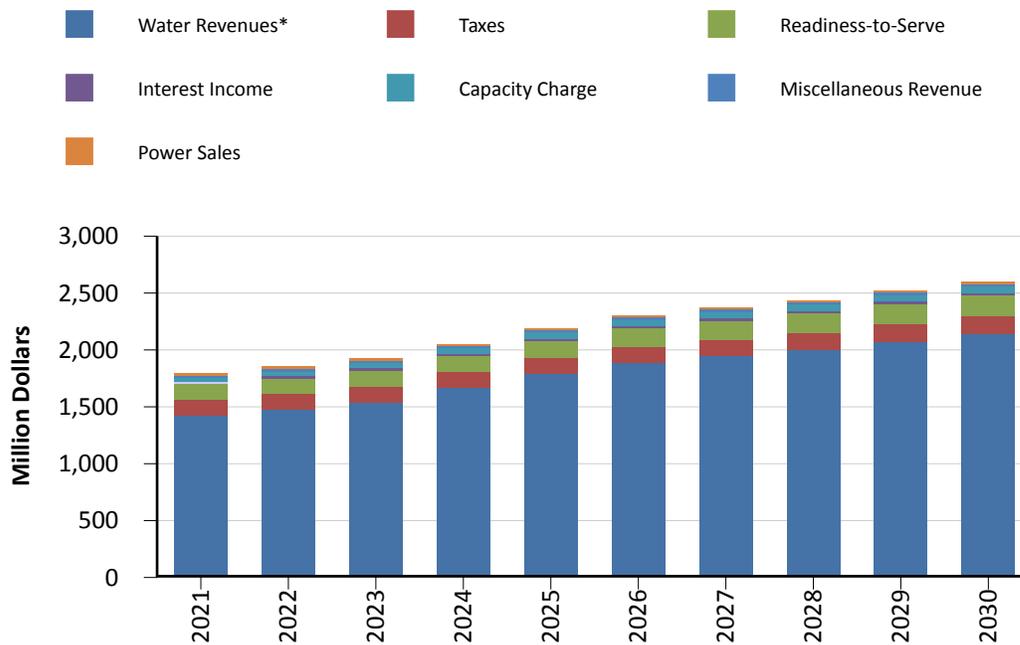
Power sales from Metropolitan’s hydroelectric power recovery plants and the CRA are projected to average about \$17.5 million per year over this ten-year period. Metropolitan has 16 small hydroelectric plants on its distribution system. These revenues are dependent on the amount of water that flows through Metropolitan's distribution system and the price paid. Power from some of the plants is sold under existing contracts that are priced higher compared to the prices currently being offered for renewable power. CRA revenues derive from the management of loads and resources on the CRA; energy not needed to meet hourly CRA loads is sold into the California Independent System Operator.

Interest income is projected to increase from \$19.0 million in FY 2020/21 to \$26.1 million in FY 2029/30 as a result of increased balances with returns of 1.5 percent annually from FY 2020/21 to FY 2029/30. Metropolitan earns interest on invested fund balances and uses this income to reduce the costs that must be recovered through rates and charges. These invested funds also act as a partial hedge against changes in interest rates on Metropolitan’s variable rate debt obligations. Interest income will vary over the ten-year forecast period as interest rates and cash balances available for investments will fluctuate.

Miscellaneous revenue is forecasted to average \$20.7 million over the ten-year forecast period. Miscellaneous revenue includes items such as leases, late fees, and water transactions with non-member agencies including Coachella Valley Water District and United States Bureau of Reclamation.

Forecasted revenues by major category are shown in the figure below.

Revenue Forecast, \$ millions



* includes revenues from water sales, exchanges and wheeling

Other Funding Sources

Other sources of funds include withdrawals from bond construction funds, Refurbishment and Replacement (R&R) Fund, General Fund, Water Stewardship Fund (WSF), Treatment Surcharge Stabilization Fund (TSSF), Water Rate Stabilization Fund (WRSF), and the Revenue Remainder Fund.

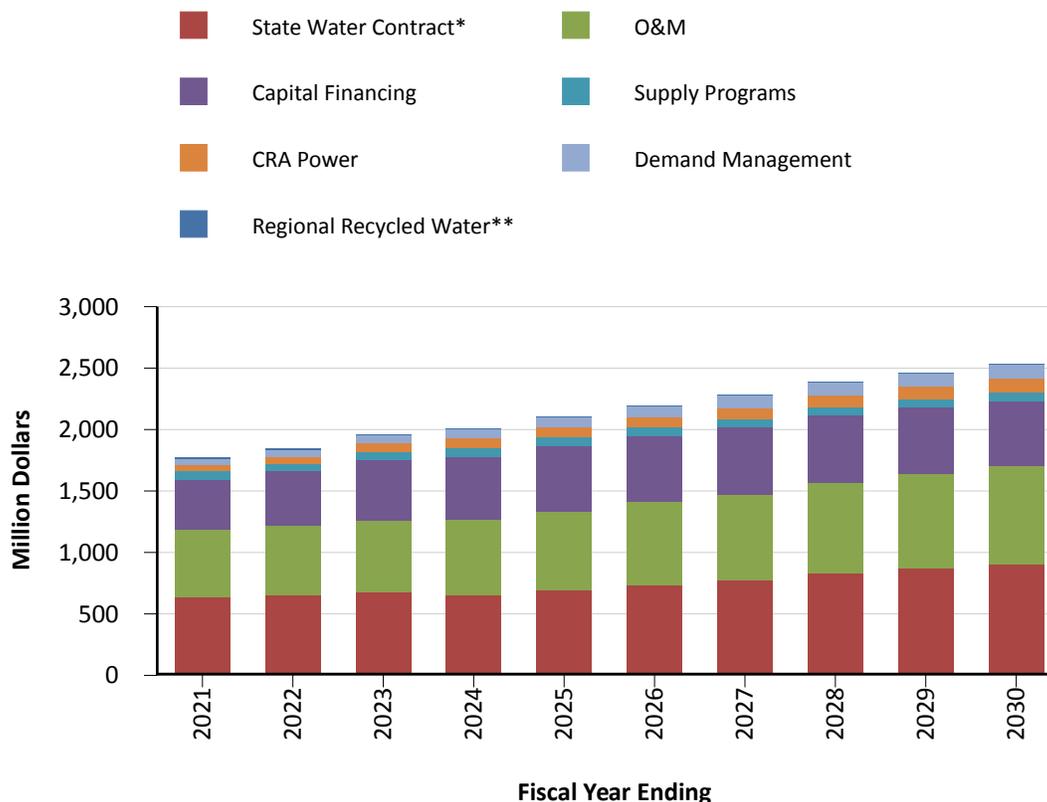
USES OF FUNDS

Over the next ten years, total annual expenses are projected to range from \$1.8 billion in FY 2020/21 to \$2.5 billion in FY 2029/30.

Expenses

Expenses are grouped into eight major categories: SWC, O&M, Regional Recycled Water, Delta Conveyance, demand management programs, CRA power costs, supply programs, and capital financing. The first figure below illustrates the general trends in expenses over the ten-year period from FY 2020/21 to FY 2029/30. The second figure following shows the comparison of FY 2020/21 to FY 2029/30 in terms of the contribution of expenses to the total.

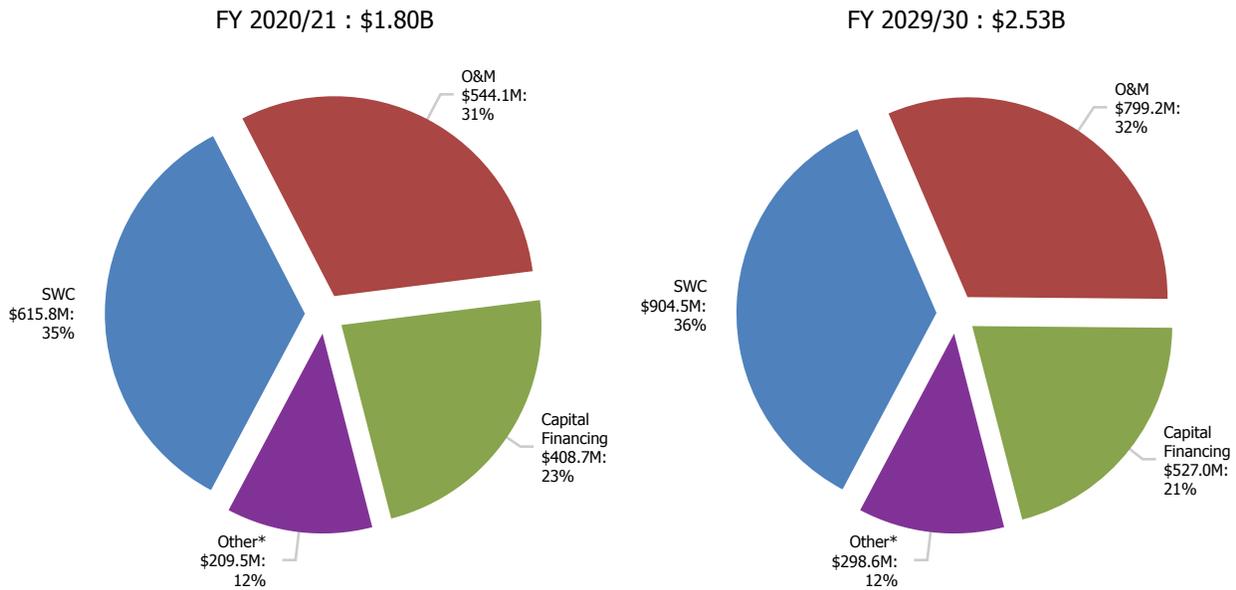
Expense Forecast, \$ millions



* includes Delta conveyance planning costs

** only includes Regional Recycled Water Program planning costs

Expenditure Forecast, Contribution by Major Area



* includes planning costs for Regional Recycled Water Program and Delta conveyance project

Regional Recycled Water Program Planning Costs

The ten year forecast includes planning costs for the Regional Recycled Water Program at \$15 million per year for FY 2020/21 and FY 2021/22 for preparation of a programmatic environmental impact report. This is the next step before the Board will be fully informed and ready to make a decision on if, how, and when to proceed with further investments in this project.

State Water Project

Metropolitan is one of 29 agencies that contract with the State of California for participation in the SWP's water supply function¹. Metropolitan is obligated to pay its share of the capital and minimum operations, maintenance, power, and replacement charges of the SWP regardless of the amount of water actually received. In addition, Metropolitan pays the power costs to convey the water. The ten-year forecast assumes that SWC annual costs, including power, will increase from \$615.8 million in FY 2020/21 to \$904.5 million in FY 2029/30, as shown in the figure below. SWC costs account for 35 percent of Metropolitan's expenses in FY 2020/21, growing to 36 percent in FY 2029/30. The remainder of the fixed costs is based upon information provided by the DWR, and is associated with Transportation Capital and Minimum Operations & Maintenance, and the Delta Water Supply Capital and Minimum Operations & Maintenance. Variable SWP power costs are projected to gradually increase over the ten-year period.

Power costs will vary depending on the price of electricity, total system deliveries, storage operations, and the amount of water pumped on the SWP. SWP variable power costs are projected to increase about 2 percent per year over the ten-year forecast period. Increasing costs affecting the SWP include the cost of emissions allowances, adding renewable energy to the SWP power portfolio, and using the California Independent System Operator grid to transmit power from generation sources to the SWP load locations.

¹ The term "supply" is used to distinguish between other functions of the SWP such as recreation and flood control. The term is not used to distinguish between the conservation (supply) and transportation (conveyance) functions of the SWP under the State Water Contracts for participation in the SWP.

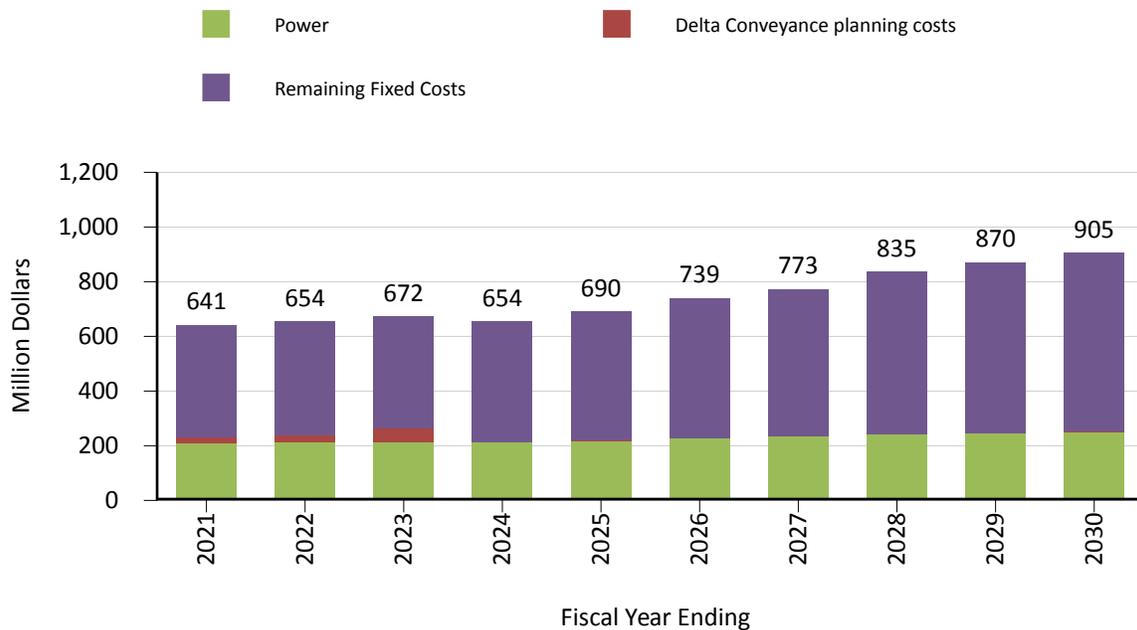
The SWP owns generating resources, including the Hyatt complex, recovery generation units on the California Aqueduct, and a contract for power from the Kings River Conservation District's Pine Flat generating facility. The SWP is a participant in the Lodi Energy Center, a natural gas-fired combined cycle generating facility located in Lodi, California, and operated by the Northern California Power Agency. The SWP has acquired renewable resources. Additional resources necessary to meet the balance of the project's energy requirements are obtained from the wholesale energy market, which exposes the SWP to wholesale energy market price volatility. Net flows through the SWP that incur power are expected to average about 878 TAF per year.

On April 29, 2019, Governor Newsom issued an executive order directing State agencies to develop a single-tunnel Bay-Delta conveyance facility instead of the approved WaterFix project. In light of this, the WaterFix project is no longer included in the ten year projection. Funding for Metropolitan's contribution for Delta conveyance project planning activities of \$100 million is included in the years FY 2021 through FY 2023. The focus over the next two years will be supporting the DWR as it seeks permits for a Delta conveyance project; participating in the Delta Conveyance Design and Construction Authority; and continuing to put forward sound scientific research to help inform and improve Delta management decisions. If staff determines that Metropolitan's appropriate contribution toward planning activities should exceed the amount included in the Biennial Budget for FY 2021 and 2022, the General Manager will request authorization from the Board for additional funding. Metropolitan's planning contribution for FY 2023 will be considered with the next biennial budget to be considered in FY 2022. Long-term costs for a Delta conveyance project has not been included in the forecast. At a later date staff will recommend that the Board separately consider Metropolitan's participation in a new Delta conveyance project after project planning has progressed further.

Please refer to the section on the SWP for additional details on SWP expenses.

The total SWC costs are shown in the figure below. The SWP is described under the Non-Departmental Budgets section of the Biennial Budget.

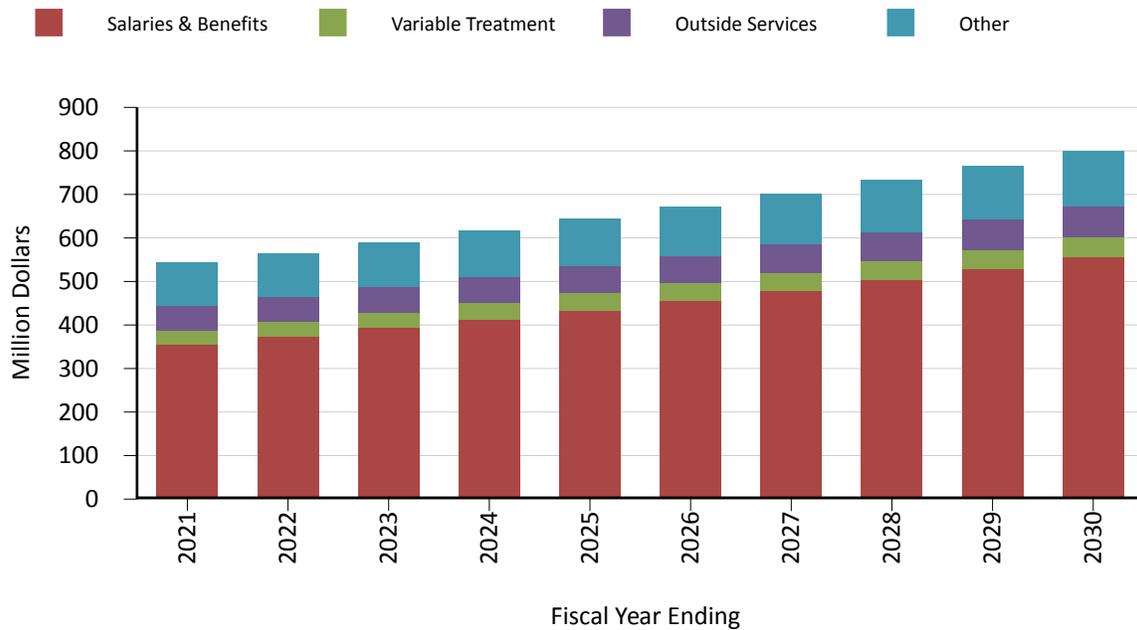
SWP Forecast, \$ millions



Operations and Maintenance

O&M costs are projected to increase from \$544 million in FY 2020/21 to \$799 million in FY 2029/30. This represents an average annual increase of 4.4 percent from FY 2020/21. During this time frame, inflation is assumed to be 3.0 percent. The ten-year forecast assumes Metropolitan continues to fully fund the annual required contribution to meet future retiree medical costs (Other Post-Employment Benefits, or OPEB) and retirement benefits.

O&M Forecast, \$ millions



Demand Management

Demand management costs include funding for the Local Resource Programs (LRP), the Conservation Program, Future Supply Actions Program and the Stormwater Pilot Program. These expenses are projected to increase from \$48.5 million in FY 2020/21 to \$114.1 million in FY 2029/30. The LRP costs are projected increase from \$19.3 million in FY 2020/21 to \$69.6 million in FY 2029/30. The projections anticipate that new projects will receive funding to meet IRP goals. The Conservation costs are projected to be \$25 million per year in the budget years (with authorization to spend up to \$43 million per year) and \$43 million per year for the remainder of the ten-year period. This program provides continued funding of residential, commercial, and outdoor conservation programs, and conservation messaging. In addition, Future Supply Actions and Stormwater Pilot costs average about \$3 million per year throughout the ten-year period.

Demand Management programs are described under the Non-Departmental Budgets section of the Biennial Budget.

CRA Power Costs

CRA Power costs are projected to increase from \$52.2 million in FY 2020/21 to \$111.9 million in FY 2029/30. Power costs will vary depending on the price of electricity, Metropolitan's resource portfolio to meet electricity needs, storage operations, and the amount of water pumped on the CRA.

Colorado River diversions are expected to average about 913 TAF over the ten-year period, slightly more than deliveries as water is stored.

Power costs are described under the Non-Departmental Budgets section of the Biennial Budget.

Supply Programs

Supply programs increase slightly over the ten-year period from \$68.7 million in FY 2020/21 to \$72.5 million in FY 2029/30. The estimates represent expenses for average year conditions. If extreme weather conditions are experienced, these cost estimates could be much higher or lower. If higher than normal demand is coupled with lower than normal supply, supply program costs could be significantly higher.

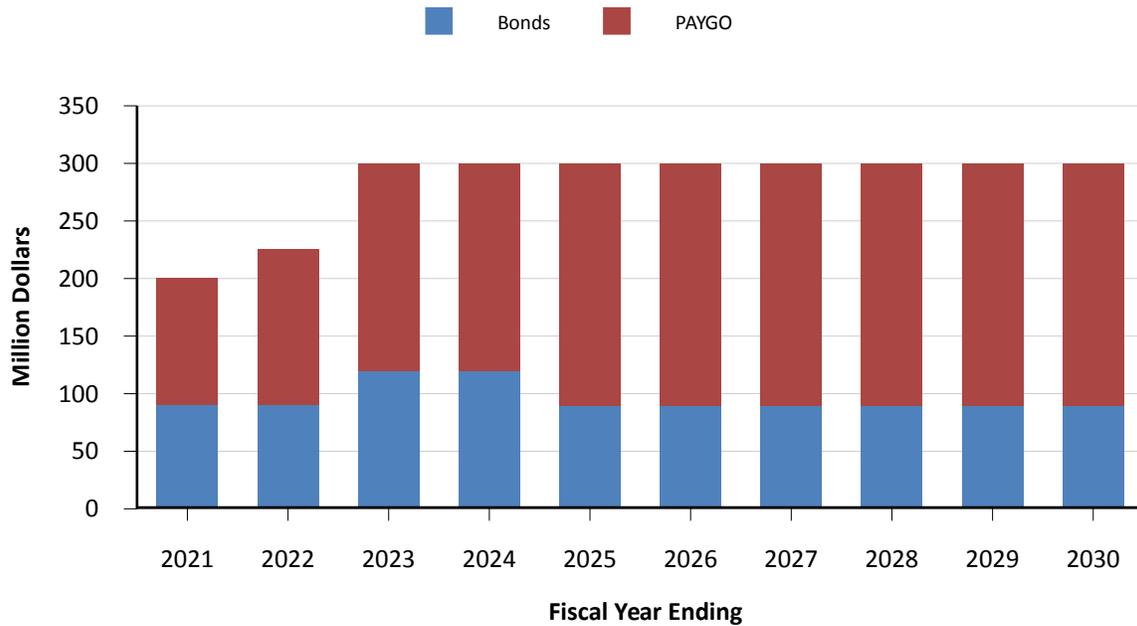
A description of Metropolitan's Supply Programs is provided under the Non-Departmental section of the Biennial Budget.

Capital Investment Plan

The ten-year projected CIP through FY 2029/30 is estimated at \$2.8 billion. The CIP continues to reflect the deferral of facility expansion projects. The CIP focuses on projects that enhance reliability while focusing on necessary refurbishment and replacement of aging infrastructure and compliance with regulatory requirements. Accordingly, the O&M impact from the resulting CIP is negligible. Without this emphasis on repair and replacement of aging facilities, O&M expenses could potentially be much higher.

The following figure shows the funding source for the ten-year CIP.

CIP Ten-Year Forecast and Funding Sources, \$ millions



Capital Financing Options

The CIP will be funded from a combination of bond proceeds and operating revenues. In order to mitigate increases in water rates, provide financial flexibility, and support Metropolitan's high credit ratings including maintaining revenue bond debt service and fixed charge coverage ratios, it is anticipated that 55 to 70 percent of the CIP will be funded from current revenues, or PAYGO. This level of PAYGO funding is appropriate given that a significant portion of future CIP projects has been identified as R&R projects. This level of PAYGO also helps ensure that Metropolitan meets its coverage targets by generating a margin of revenues over operating and debt expenses. The additional revenue required to meet Metropolitan's revenue bond debt service coverage target of 2.0 times and fixed charge coverage of 1.2 times is available to fund the CIP. PAYGO funding throughout the ten-year horizon of the planning period ensures that current customers are always contributing funds towards the capital investments from which they benefit, and not deferring these costs entirely to future generations of ratepayers.

Bond funded expenditures may include a combination of variable and fixed rate debt. Debt has been structured to mitigate near-term rate impacts and smooth out long-term debt service. The principal advantage of variable rate debt is the opportunity for a lower interest cost. Normally, short-term interest rates are lower than long-term interest rates for debt of comparable credit quality. If interest rates remain constant, Metropolitan will generally have significantly lower interest costs on variable rate debt than on fixed rate debt, even after remarketing and liquidity facility costs. Also, if interest rates decline, Metropolitan will benefit from lower interest costs without the necessity or cost of a refunding. If interest rates rise, variable rates could stay lower than the fixed rate originally avoided, and the longer the variable rate debt is outstanding at favorable spreads, the higher the break-even point becomes on fixed rate debt. Variable rate debt is used to mitigate interest costs over the long term, and provides a natural hedge against changes in investment earnings: when interest rates are high, interest costs on variable rate debt is higher but so are earnings from Metropolitan's investment portfolio. When interest rates are low, interest earnings are lower, but so are variable rate interest costs.

Typically, fixed rate bonds are only redeemable a given number of years after their issuance. Variable rate debt, on the other hand, is generally redeemable on any interest payment or reset date.

However, variable rate debt does have risks. These risks include:

- Rising interest rates. Because future interest rates are unknown, the costs of capital improvements financed with variable rate debt are more difficult to estimate for revenue planning purposes. Significant interest rate increases could cause financial stress.
- Liquidity facility renewal risk. Variable rate debt normally requires a liquidity facility to protect the investors and issuers against “puts” of a large portion or all of the debt on a single day. Liquidity facilities generally do not cover the full term of the debt. If an issuer’s credit declines or the liquidity facility capacity is not available, the issuer runs the risk of not being able to obtain an extension or renewal of the expiring liquidity facility. In that event, the issuer may have to retire the debt or convert it to fixed rate debt.

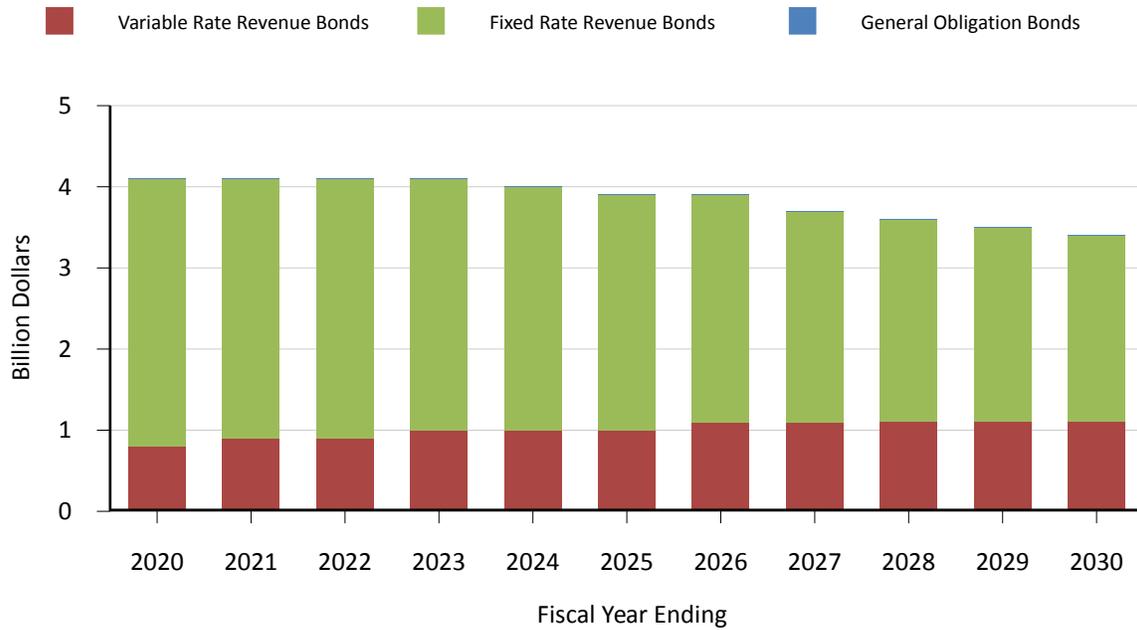
In the last several years, Metropolitan has issued self-liquidity debt. Metropolitan is irrevocably committed to purchase all self-liquidity bonds tendered pursuant to any optional or mandatory tender to the extent that remarketing proceeds are insufficient and no standby bond purchase agreement or other liquidity facility is in effect. Metropolitan’s obligation to pay the purchase price of any tendered self-liquidity bonds is an unsecured, special limited obligation of Metropolitan payable from net operating revenues. In addition, Metropolitan’s investment policy permits it to purchase tendered self-liquidity bonds as an investment for its investment portfolio. So, 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 to purchase tendered self-liquidity bonds. Metropolitan has not secured any liquidity facility or letter of credit to pay the purchase price of any tendered self-liquidity bonds; however, Metropolitan has entered into revolving credit agreements with which it may make borrowings for the purpose of paying the purchase price of self-liquidity bonds.

Debt Financing

It is anticipated that there will be about \$2.8 billion of capital expenditures over the ten-year period. Of this, \$960.0 million, or 34 percent of future capital expenditures, are anticipated to be funded by debt proceeds. Outstanding debt, including revenue and general obligation bonds ("GO bonds"), as of December 31, 2019 is \$4.0 billion. The net position of Metropolitan at June 30, 2019 was \$6.8 billion. Metropolitan may not have outstanding revenue bond debt in amounts greater than 100 percent of its equity. As of June 30, 2019, the debt to equity ratio was 59 percent.

Total outstanding debt is illustrated below. Total outstanding debt is estimated to be \$3.4 billion by FY 2029/30, approximately 15 percent lower than the current level.

Outstanding Debt, \$ billions

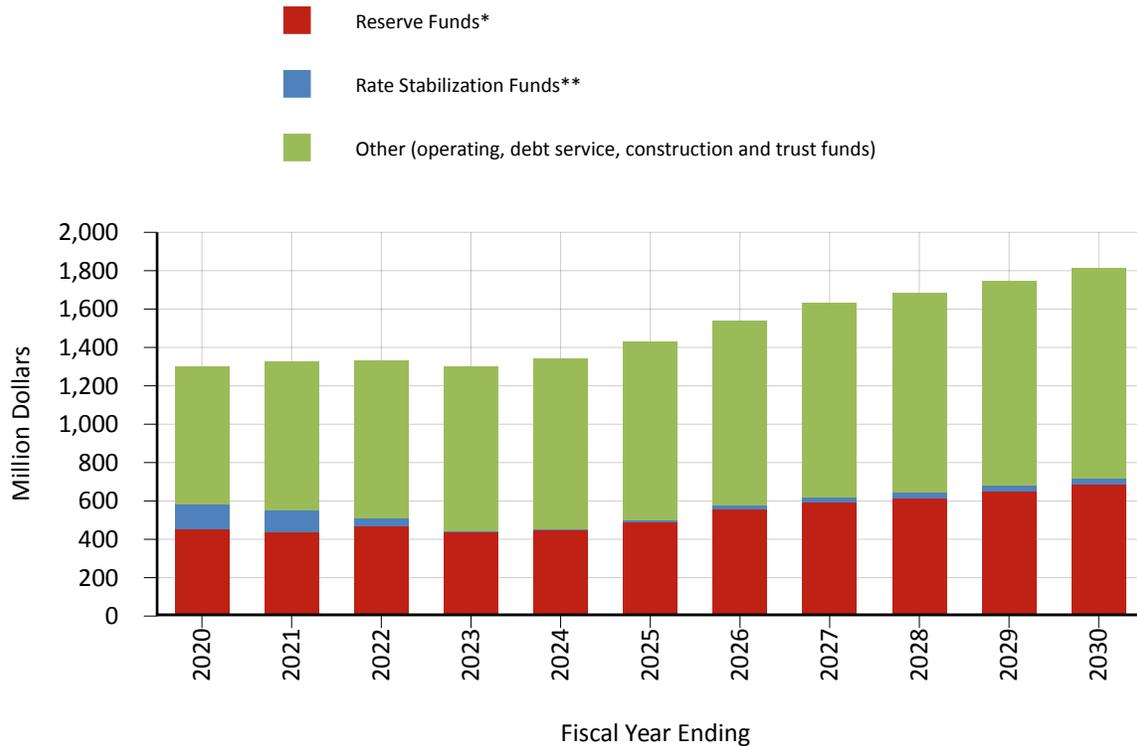


Metropolitan’s variable rate debt as a percentage of total revenue bond debt is projected to increase to 32% percent over this time period as fixed rate debt is retired. The appropriate amount of variable rate debt will continue to be monitored and adjusted depending on market rates, financing needs, available short-term investments, and fund levels in the investment portfolio with which variable interest rate exposure can be hedged. GO bond debt will decrease as voter approved indebtedness matures.

FUND BALANCES AND RESERVES

As shown in the figure below, over the next ten years total fund balances are projected to increase to \$1.8 billion in FY 2029/30.

End of Year Fund Balances, \$ millions



* includes Water Rate Stabilization Fund and Revenue Remainder Fund.

** includes Water Stewardship Fund and Treatment Surcharge Stabilization Fund.

FINANCIAL RATIOS

Revenue bond debt service coverage is one primary indicator of credit quality, and is calculated by dividing net operating revenues by debt service. Revenue bond debt service coverage measures the amount that net operating revenues exceed or "cover" debt service payments over a period of time. Higher coverage levels are preferred since they indicate a greater margin of protection for bondholders. For example, a municipality with 2.0 times debt service coverage has twice the net operating revenues required to meet debt service payments. The ten-year forecast projects that Metropolitan's revenue bond coverage ratio achieves 2.0 times by FY 2024/25. Metropolitan's minimum coverage policy is vital to continued strong credit ratings and low cost bond funding.

In addition to revenue bond debt service coverage, Metropolitan also measures total coverage of all fixed obligations after payment of operating expenditures. This additional measure is used primarily because of Metropolitan's recurring capital costs for the SWC. Rating agencies expect that a financially sound utility consistently demonstrate an ability to fund all recurring costs, whether they are operating expenditures, debt service payments or other contractual payments. The ten-year forecast projects that Metropolitan's fixed charge coverage ratio is at least 1.5 times over the ten-year period. These levels help maintain strong credit ratings and access to the capital markets at low cost, and provide PAYGO funding for the CIP.

Ten-Year Financial Forecast, Sources and Uses of Funds, \$ millions

| Fiscal Year Ending | 2021 Adopted | 2022 Adopted | 2023 Forecast | 2024 Forecast | 2025 Forecast | 2026 Forecast | 2027 Forecast | 2028 Forecast | 2029 Forecast | 2030 Forecast |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| SOURCES OF FUNDS | | | | | | | | | | |
| Revenues | | | | | | | | | | |
| Taxes | 139.9 | 140.1 | 140.1 | 140.1 | 140.0 | 143.2 | 146.4 | 149.7 | 153.0 | 156.4 |
| Interest Income | 19.0 | 19.3 | 19.1 | 19.2 | 20.1 | 21.6 | 23.1 | 24.3 | 25.1 | 26.1 |
| Power Sales | 20.8 | 21.9 | 23.5 | 14.2 | 14.0 | 15.2 | 15.6 | 15.8 | 16.7 | 17.5 |
| Fixed Charges (RTS & Capacity Charge) | 167.7 | 175.5 | 183.2 | 188.5 | 201.7 | 213.3 | 219.9 | 228.1 | 234.6 | 235.6 |
| Water Revenues (1) | 1,429.2 | 1,475.9 | 1,542.5 | 1,666.6 | 1,792.6 | 1,887.6 | 1,943.4 | 2,000.0 | 2,071.8 | 2,141.6 |
| Miscellaneous Revenue | 19.9 | 20.5 | 21.0 | 21.5 | 22.1 | 22.7 | 23.2 | 18.4 | 18.8 | 19.3 |
| Bond Proceeds | 99.3 | 89.4 | 119.2 | 119.2 | 89.4 | 89.4 | 89.4 | 89.4 | 89.4 | 89.4 |
| Sub-total Revenues | 1,895.9 | 1,942.5 | 2,048.4 | 2,169.3 | 2,280.0 | 2,392.9 | 2,461.0 | 2,525.5 | 2,609.5 | 2,686.0 |
| Fund Withdrawals | | | | | | | | | | |
| R&R and General Fund | 110.0 | 135.0 | 180.0 | 180.0 | 210.0 | 210.0 | 210.0 | 210.0 | 210.0 | 210.0 |
| Bond Funds for Construction | — | 0.6 | 0.8 | 0.8 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| Water Stewardship Fund | 22.7 | 75.5 | 27.9 | — | — | — | 1.7 | — | — | — |
| Treatment Surcharge Stabilization Fund | — | — | 6.0 | 1.2 | — | — | — | — | — | 3.4 |
| Decrease in Water Rate Stabilization Fund | 12.6 | — | 41.9 | 3.5 | — | — | — | — | — | — |
| Sub-total Fund Withdrawals | 145.3 | 211.1 | 256.6 | 185.6 | 210.6 | 210.6 | 212.3 | 210.6 | 210.6 | 214.1 |
| TOTAL SOURCES OF FUNDS | 2,041.2 | 2,153.6 | 2,305.1 | 2,354.9 | 2,490.6 | 2,603.5 | 2,673.3 | 2,736.2 | 2,820.1 | 2,900.1 |
| Water Transactions* (MAF) | 1.60 | 1.60 | 1.60 | 1.64 | 1.69 | 1.74 | 1.74 | 1.74 | 1.75 | 1.75 |

Totals may not foot due to rounding.

(1) includes revenues from water sales and exchanges

| Fiscal Year Ending | 2021 Adopted | 2022 Adopted | 2023 Forecast | 2024 Forecast | 2025 Forecast | 2026 Forecast | 2027 Forecast | 2028 Forecast | 2029 Forecast | 2030 Forecast |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| USES OF FUNDS | | | | | | | | | | |
| Expenses | | | | | | | | | | |
| State Water Contract (1) | 615.8 | 629.4 | 622.0 | 653.2 | 690.2 | 739.4 | 773.3 | 834.4 | 870.0 | 904.5 |
| Supply Programs | 68.7 | 61.2 | 68.8 | 77.4 | 69.0 | 68.5 | 68.9 | 69.8 | 71.8 | 72.5 |
| Delta Conveyance Project planning costs | 25.0 | 25.0 | 50.0 | — | — | — | — | — | — | — |
| Colorado River Power | 52.2 | 57.6 | 67.6 | 78.3 | 79.8 | 84.1 | 89.2 | 91.5 | 100.5 | 111.9 |
| Regional Recycled Water Program planning | 15.0 | 15.0 | — | — | — | — | — | — | — | — |
| Debt Service | 298.7 | 307.0 | 309.1 | 326.1 | 322.6 | 328.9 | 334.1 | 339.4 | 330.9 | 317.0 |
| Demand Management | 48.5 | 52.5 | 71.0 | 76.7 | 85.5 | 91.7 | 99.9 | 105.1 | 109.5 | 114.1 |
| Departmental O&M | 502.6 | 522.9 | 546.4 | 571.0 | 596.7 | 623.7 | 651.9 | 681.5 | 712.4 | 744.8 |
| Treatment Chemicals, Sludge & Power | 33.6 | 34.8 | 35.9 | 37.8 | 40.1 | 40.1 | 41.3 | 42.6 | 44.1 | 45.4 |
| Other O&M | 7.9 | 7.2 | 7.4 | 7.6 | 7.9 | 8.0 | 8.3 | 8.6 | 8.8 | 9.0 |
| Sub-total Expenses | 1,668.0 | 1,712.5 | 1,778.0 | 1,828.1 | 1,891.6 | 1,984.6 | 2,066.9 | 2,172.7 | 2,247.9 | 2,319.4 |
| Capital Investment Plan | 200.0 | 225.0 | 300.0 | 300.0 | 300.0 | 300.0 | 300.0 | 300.0 | 300.0 | 300.0 |
| Fund Deposits | | | | | | | | | | |
| R&R and General Fund | 110.0 | 135.0 | 180.0 | 180.0 | 210.0 | 210.0 | 210.0 | 210.0 | 210.0 | 210.0 |
| Revenue Bond Construction | 9.3 | — | — | — | — | — | — | — | — | — |
| Treatment Surcharge Stabilization Fund | 10.4 | 2.0 | — | — | 7.1 | 7.3 | 6.9 | 3.5 | 1.7 | — |
| Interest for Construction & Trust Funds | 1.1 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 | 1.2 |
| Increase in Required Reserves | 42.4 | 60.8 | 45.9 | 45.6 | 54.6 | 49.0 | 65.1 | 40.4 | 35.9 | 46.0 |
| Increase in Water Rate Stabilization Fund | — | 17.2 | — | — | 26.1 | 49.0 | 23.2 | 7.5 | 22.6 | 23.5 |
| Sub-total Fund Deposits | 173.2 | 216.1 | 227.1 | 226.8 | 299.0 | 318.9 | 306.4 | 263.5 | 272.2 | 280.7 |
| TOTAL USES OF FUNDS | 2,041.2 | 2,153.6 | 2,305.1 | 2,354.9 | 2,490.6 | 2,603.5 | 2,673.3 | 2,736.2 | 2,820.1 | 2,900.1 |

Totals may not foot due to rounding.

(1) without Delta conveyance planning costs

Ten-Year Financial Forecast, Coverage Ratios and Fund Balances, \$ millions

| Fiscal Year Ending | 2021 Adopted | 2022 Adopted | 2023 Forecast | 2024 Forecast | 2025 Forecast | 2026 Forecast | 2027 Forecast | 2028 Forecast | 2029 Forecast | 2030 Forecast |
|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| RATIOS | | | | | | | | | | |
| Fixed Charge Coverage | 1.5 | 1.5 | 1.5 | 1.7 | 1.9 | 1.9 | 1.8 | 1.6 | 1.7 | 1.7 |
| Revenue Bond Coverage | 1.5 | 1.5 | 1.5 | 1.7 | 2.0 | 2.1 | 2.1 | 2.1 | 2.2 | 2.3 |
| Var. Rate Debt as % of Rev. Bond Debt | 21.6% | 22.5% | 23.5% | 24.1% | 25.8% | 27.6% | 29.2% | 30.9% | 32.1% | 32.4% |
| RESTRICTED AND DESIGNATED FUNDS | | | | | | | | | | |
| General Fund | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 | 70.0 |
| Treatment Surcharge Stabilization Fund | 10.4 | 12.4 | 6.4 | 5.2 | 12.3 | 19.6 | 26.5 | 29.9 | 31.7 | 28.2 |
| Water Stewardship Fund | 103.4 | 27.9 | — | — | — | 2.5 | 0.8 | 1.7 | 2.5 | 2.5 |
| R&R Fund | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |
| Other | 700.7 | 749.1 | 783.9 | 813.4 | 853.4 | 886.3 | 937.7 | 966.8 | 989.9 | 1,023.6 |
| Sub-total Restricted Funds | 889.0 | 863.9 | 864.7 | 893.0 | 940.2 | 982.7 | 1,039.4 | 1,072.9 | 1,098.5 | 1,128.8 |
| UNRESTRICTED FUNDS | | | | | | | | | | |
| Reserve Funds (1) | 437.1 | 467.2 | 436.8 | 449.6 | 490.8 | 556.5 | 593.9 | 613.3 | 649.3 | 685.6 |
| Sub-total Unrestricted Funds | 437.1 | 467.2 | 436.8 | 449.6 | 490.8 | 556.5 | 593.9 | 613.3 | 649.3 | 685.6 |
| TOTAL FUNDS | 1,326.0 | 1,331.0 | 1,301.4 | 1,342.6 | 1,431.0 | 1,539.3 | 1,633.3 | 1,686.2 | 1,747.8 | 1,814.3 |

Totals may not foot due to rounding.

(1) includes Water Rate Stabilization Fund and Revenue Remainder Fund.

CAPITAL INVESTMENT PLAN

Summary

The primary focus of the CIP Appendix is to provide information on all capital programs and projects that have been proposed, evaluated, and included in the budget forecast to begin or continue during and after FY 2020/21 and FY 2021/22. Scope, accomplishments, objectives and financial projections are provided for each capital program. Every project with work planned for the two budget years and beyond is listed under the Individual Program Summaries.

The total planned capital spending for FY 2020/21 and FY 2021/22 of approximately \$500 million includes all anticipated costs for labor including administrative overhead, construction and professional services contract costs, right of way, materials, operating equipment, and incidental expenses.

Annual planned capital spending for FY 2020/21 and FY 2021/22 is estimated to be approximately \$250 million and is planned to be funded by a combination of current operating revenues (i.e., PAYGO) and debt.

| Capital Program | FY 2020/21 | FY 2021/22 | Total |
|---|-----------------------|-----------------------|-----------------------|
| Colorado River Aqueduct Reliability | \$ 55,000,000 | \$ 52,370,000 | \$ 107,370,000 |
| Cost Efficiency & Productivity | \$ 6,705,000 | \$ 8,800,000 | \$ 15,505,000 |
| Dams & Reservoirs Improvements | \$ 5,100,000 | \$ 13,100,000 | \$ 18,200,000 |
| Distribution System Reliability | \$ 37,200,000 | \$ 29,900,000 | \$ 67,100,000 |
| District Housing & Property Improvements | \$ 3,500,000 | \$ 7,500,000 | \$ 11,000,000 |
| Minor Capital Projects | \$ 3,800,000 | \$ 5,400,000 | \$ 9,200,000 |
| Prestressed Concrete Cylinder Pipe Rehabilitation | \$ 30,260,000 | \$ 23,600,000 | \$ 53,860,000 |
| Regional Recycled Water | \$ 210,000 | \$ — | \$ 210,000 |
| Right of Way & Infrastructure Protection | \$ 2,415,000 | \$ 5,700,000 | \$ 8,115,000 |
| System Flexibility/Supply Reliability | \$ 13,600,000 | \$ 24,800,000 | \$ 38,400,000 |
| System Reliability | \$ 44,900,000 | \$ 52,500,000 | \$ 97,400,000 |
| Treatment Plant Reliability | \$ 48,550,000 | \$ 27,610,000 | \$ 76,160,000 |
| Water Quality/Oxidation Retrofit | \$ 18,500 | \$ — | \$ 18,500 |
| Total | \$ 251,258,500 | \$ 251,280,000 | \$ 502,538,500 |

Capital Investment Plan Organization

CIP Structure

The CIP has been restructured for clearer planning and reporting into the following format:

1. PROGRAM
2. PROJECT GROUP
3. PROJECT

The highest level of the CIP structure is Program. Programs are comprised of one or more Project Groups. There are 13 capital programs described in Table 1.

Table 1 - Capital Programs

| Program | Definition |
|---|---|
| Colorado River Aqueduct (CRA) Reliability | Projects under this program will replace or refurbish facilities and components on the CRA system in order to reliably convey water from the Colorado River to Southern California. |
| Cost Efficiency & Productivity | Projects under this program will upgrade, replace, or provide new facilities, software applications, or technology that will provide economic savings that outweigh project costs through enhanced business and operating processes. |
| Dams & Reservoirs Improvements | Projects under this program will upgrade or refurbish Metropolitan’s dams, reservoirs, and appurtenant facilities in order to reliably meet water storage needs and regulatory compliance. |
| Distribution System Reliability | Projects under this program will replace or refurbish existing facilities within Metropolitan’s distribution system including pressure control structures, hydroelectric power plants, and pipelines in order to reliably meet water demands. |
| District Housing & Property Improvements | Projects under this program will refurbish or upgrade Metropolitan workforce housing to enhance living conditions and attract and retain skilled employees. |
| Minor Capital Projects | This program will execute refurbishments, replacements, or upgrades at Metropolitan facilities that cost less than \$400,000 each, and which projects will be identified after adoption of the budget. |
| Prestressed Concrete Cylinder Pipe (PCCP) Reliability | Projects under this program will refurbish or upgrade Metropolitan’s PCCP feeders to maintain reliable water deliveries without unplanned shutdowns. |
| Regional Recycled Water | Projects under this Program are planned to demonstrate the feasibility of recycling wastewater for recharge of groundwater basins, and provide a new, sustainable and drought resistant source of supply for Southern California. |
| Right-of-Way and Infrastructure Protection | Projects under this program will refurbish or upgrade above-ground facilities and rights-of-way along Metropolitan’s pipelines in order to address access limitations, erosion-related work, and security needs. |
| System Flexibility/Supply Reliability | Projects under this program will enhance the flexibility and/or increase the capacity of Metropolitan’s water supply and delivery infrastructure to meet current and projected service demands. |

| Program | Definition |
|---|---|
| System Reliability | Projects under this program will improve or modify facilities throughout Metropolitan's service area in order to utilize new processes and/or technologies, and to improve facility safety and overall reliability. These include projects related to Metropolitan's Supervisory Control and Data Acquisition (SCADA) system and other Information Technology projects. |
| Treatment Plant Reliability: <ul style="list-style-type: none"> • Diemer Plant • Jensen Plant • Mills Plant • Skinner Plant • Weymouth Plant | Projects under this program will replace or refurbish facilities and components at Metropolitan's five water treatment plants in order to continue to reliably meet treated water demands. |
| Water Quality/Oxidation Retrofit | Projects under this program will add or upgrade facilities to ensure compliance with water quality regulations for treated water at Metropolitan's treatment plants and throughout the distribution system. |

Capital Investment Plan Development

Background

The projects that comprise the proposed CIP have been identified from many Metropolitan studies of projected water needs as well as ongoing monitoring and inspections, condition assessments, and focused vulnerability studies. Staff continues to study operational demands on aging facilities and has made recommendations for capital projects that will maintain infrastructure reliability and ensure compliance with all applicable water quality regulations, and building, fire, and safety codes. Staff has also studied business and operations processes and proposed projects that will improve efficiency and provide future cost savings. Additionally, several projects have been identified and prioritized to provide flexibility in system operations to address uncertain supply conditions from the Colorado River and the State Water Project.

CIP Development Process

The CIP is structured to reflect Metropolitan's strategic goals of providing a reliable supply of high-quality water at the lowest cost possible. As part of the CIP development process, all new and existing projects are evaluated against an objective set of criteria to ensure existing and future capital investments are aligned with Metropolitan's priorities for water supply reliability, water quality, and public safety.

This rigorous evaluation process has resulted in a thorough review and assessment of all proposed capital projects by staff and managers prior to inclusion in the CIP budget. Staff continues to conduct comprehensive field investigations that identify critical replacement and refurbishment projects and a variety of necessary facility upgrades related to infrastructure reliability as well as regulatory compliance. Project schedules are evaluated regularly in order to plan for necessary capital investments in infrastructure reliability and to accommodate the urgency of each project. Additionally, current demand projections that account for ongoing conservation, planned increased local supply production, and the economy, have been evaluated to ensure that demand and growth-related projects are appropriately scheduled.

Project Proposals

Sponsors are required to submit proposals for all projects that have not yet been authorized for construction or approved to proceed with final design to be considered for inclusion into the CIP. For newly proposed projects, proposals must include scope, justification, alternatives, impacts of re-scheduling work for a later time, impact on operations and maintenance costs, and an estimate of total project cost. For existing projects, staff must also provide justification for continuing the project, explain any changes since the proposal was last evaluated, and describe critical phases for the upcoming years.

The projects are evaluated, rated, and prioritized based on the contents of the proposals. The guidelines provided to the project sponsors are summarized in Table 2.

Table 2 - Project Proposal Guidelines

| Section | Guideline | | | | | | | | | | | | |
|--|--|------------------------------|--------------------|----------------------------|---------------------|------------------------------|-------------------------------|-------------------------|--------------------------------|---------------------------|-------------------|------------------|----------------------------|
| Appropriation No., CIP Index No., Project No., (if existing) and Project Title | If a proposed project has been previously authorized by the Board, provide the Appropriation and CIP Index numbers along with the project title and project number if one has been assigned. If not previously authorized, provide a project title only. | | | | | | | | | | | | |
| Sponsoring Group | <p>Indicate the Group sponsoring the project, as follows:</p> <table border="0"> <tr> <td>1) Office of General Manager</td> <td>7) Human Resources</td> </tr> <tr> <td>2) Water System Operations</td> <td>8) External Affairs</td> </tr> <tr> <td>3) Water Resource Management</td> <td>9) General Counsel Department</td> </tr> <tr> <td>4) Engineering Services</td> <td>10) General Auditor Department</td> </tr> <tr> <td>5) Information Technology</td> <td>11) Ethics Office</td> </tr> <tr> <td>6) Real Property</td> <td>12) Environmental Planning</td> </tr> </table> | 1) Office of General Manager | 7) Human Resources | 2) Water System Operations | 8) External Affairs | 3) Water Resource Management | 9) General Counsel Department | 4) Engineering Services | 10) General Auditor Department | 5) Information Technology | 11) Ethics Office | 6) Real Property | 12) Environmental Planning |
| 1) Office of General Manager | 7) Human Resources | | | | | | | | | | | | |
| 2) Water System Operations | 8) External Affairs | | | | | | | | | | | | |
| 3) Water Resource Management | 9) General Counsel Department | | | | | | | | | | | | |
| 4) Engineering Services | 10) General Auditor Department | | | | | | | | | | | | |
| 5) Information Technology | 11) Ethics Office | | | | | | | | | | | | |
| 6) Real Property | 12) Environmental Planning | | | | | | | | | | | | |
| Estimated Total Project Cost | Show the total estimate of cost from inception to completion of a project, including administrative overhead and contingency, as applicable. | | | | | | | | | | | | |
| GM Business Plan | Indicate the strategic priorities under GM’s Business Plan the project best supports. | | | | | | | | | | | | |
| Current Project Phase | Indicate the phase (Study, Preliminary Design, etc.) as of the date proposal submitted. | | | | | | | | | | | | |
| Current Phase % Complete | Current phase percent complete as of the date proposal submitted. | | | | | | | | | | | | |
| Project Description | Describe the project scope of work. | | | | | | | | | | | | |
| Changes to Existing Project | For an existing project, describe any changes to the project scope, budget, or schedule over the past two years. | | | | | | | | | | | | |
| Justification | <p>Describe the nature of the issue to be addressed by the project. What is the problem? What is the function of the facility/component being addressed by the project? Why is it important?</p> <p>Consider issues such as:</p> <ul style="list-style-type: none"> • Operational flexibility • New facility expansion • New water supply • Aging infrastructure deterioration/failure • Process improvement/failure • Maintenance capability • Seismic vulnerability • Obsolescence (vendor support, parts, technology, etc.) • Security • Regulatory Compliance (water quality, environmental, health and safety, etc.) • Cost savings • Revenue generation • Energy savings • Productivity <p>Include an explanation of how the project addresses any of the above issues and provide documentation, when applicable, to substantiate the need for the project.</p> | | | | | | | | | | | | |

| Section | Guideline |
|-----------------------------------|---|
| Directive | <p>Regulatory/Legal Settlement: Indicate if this is related to a written citation or directive, verbal/written directive, or in-house identification (includes environmental mitigation mandated by an MND or EIR).</p> <p>Special Initiative/Directive: Indicate if the project is specifically identified in one of the core or strategic initiatives; identified via Area Study, System Overview Study, etc.; and/or what phase(s) of the project have been authorized such as study, preliminary design, or final design.</p> |
| Service Disruption | Describe how Metropolitan’s day-to-day operations could be impacted if the project is not approved. Consider business, as well as water system operations, including maintenance activities. |
| Cost/Productivity/Sustainability | Describe potential cost, water, and/or energy savings, waste reduction, revenue/energy generation, better customer service, etc., that justify the project. Include a pay-back period. |
| Alternatives | Provide a brief description of any potential project scope alternatives, including any opportunities to “stage” the work. Include if it is possible to only perform a portion of a project to meet foreseeable customer needs. Consider the possibility of new technology, changing demands, as well as environmental impacts and economies of scale. Describe any reasonable projects, processes, or other initiatives available as alternatives to the project. Discuss both positive and negative aspects of each alternative. If possible, explain what other similar agencies are doing about this or similar issue. |
| Additional Background Information | Provide any other supplemental information (e.g. detailed history of a problem, supporting technical information, shutdown constraints, etc.) that will help in evaluating the project. This can also be attached to the proposal. |
| Schedule | Indicate the proposed beginning and end dates for all appropriate phases. |
| Detailed Project Cost Estimate | <p>Include an itemized list of all costs for the project, as follows:</p> <ol style="list-style-type: none"> 1) Direct Labor with additives at the indicated rate 2) Equipment and Materials 3) Incidental Expenses 4) Professional/Technical Services (e.g., consultants) 5) Right-of-Way and Land Purchases (e.g., easements, fee title, escrow fees) 6) Operating Equipment Use and Rental 7) Contract Payments (e.g., construction contracts) 8) Administrative Overhead at the indicated rate 9) Contingency <p>All new project proposals and existing projects must include this estimate.</p> |
| Post-Implementation O&M Impacts | To the extent available/known, provide a description of the impacts, costs, and/or benefits this capital project is anticipated to have on Metropolitan’s current and future O&M expenses and services upon completion (e.g. labor, maintenance, and equipment costs; enhanced reliability; improved water quality, etc. For example, “Ozone generators will substantially increase electrical consumption by approximately \$1 million annually and the number of new pieces of equipment will require periodic maintenance per the manufacturer’s recommendations beginning in FY 2015/16. PDR and future studies will provide additional detail on the overall lifecycle costs”). This is required for projects greater than \$2 million and whose planned implementation date is within the next five fiscal years. |
| Approvals | <ol style="list-style-type: none"> 1) Person preparing and submitting the proposed project - Type name only 2) Team manager sponsoring the project 3) Unit manager sponsoring the project 4) Section manager sponsoring the project (e.g., all new and existing projects) 5) Group manager sponsoring the project (e.g., all new projects) 6) Project manager signs in concurrence. (e.g., Engineering and IT organizations) |

Evaluation Criteria

The evaluation criteria cover four characteristics or objectives for capital projects: Project Justification, Directive, Service Disruption, and Cost/Productivity/Sustainability. In addition, a multiplier is applied to a project rating to factor in a risk assessment. Table 3 provides a description of the criteria and multiplier.

Table 3 - Evaluation Criteria and Multiplier

| Criteria | Description |
|--------------------------------------|---|
| Justification | <p>Assessment of the overall importance of a project. Criterion looks at whether or not a project supports the following:</p> <ul style="list-style-type: none"> - Supply reliability - Infrastructure reliability - Regulatory compliance - Other goals (e.g., cost savings, revenue generation, energy savings, and increased productivity) |
| Directive | <p>Assessment of whether or not a project is specifically identified in one of the core or strategic initiatives, if any permitting agency such as the California State Department of Safety of Dams has issued a directive or citation to take corrective actions, the current authorized scope of work, and/or support the GM Business Plan:</p> <ul style="list-style-type: none"> - Regulatory/Legal Settlement - Special Initiative/Directive - Board authorization - GM Business Plan |
| Service Disruption | <p>Assessment of not doing a project. Criterion evaluates the following:</p> <ul style="list-style-type: none"> - Impact to Metropolitan’s business operations - Impact to water system operations (e.g., system delivery and/or reliability, cascading impact on system due to failure, etc.) |
| Cost/Sustainability/Customer Service | <p>Assessment of whether or not a project improves the following:</p> <ul style="list-style-type: none"> - Cost efficiency - Sustainability - Customer service |

| Multiplier | Description |
|-------------------|--|
| Risk Assessment | <p>Assessment of the probability of:</p> <ul style="list-style-type: none"> - Facility/component/process failure - Workplace health and safety - Water quality or environmental impact - Missed opportunity (e.g., available resources, shutdown, revenue generation, cost savings, supply) - Not meeting service demands |

Project Evaluation

A CIP Evaluation Team comprised of staff from Water System Operations, Water Resource Management, Real Property, Engineering Services, Finance, Information Technology, Environmental Planning, and External Affairs evaluate and rate all project proposals. The evaluation criterion is designed to prioritize projects that directly support reliability, quality, and safety for inclusion in Metropolitan’s proposed CIP.

An iterative process is employed to first score and rank every new and existing project, and then solicit feedback from project sponsors, customers, and resource providers in order to establish schedules and cash flow requirements. Those schedules, along with analyses of facility shutdown requirements, environmental permitting timeframes, and contracting process requirements, also enable resource managers to identify staffing needs. The final schedule and implementation plan for FY 2020/21 and FY 2021/22 are reflected in the budget and objectives summarized under each of the Individual Programs Summaries that appear later in this document.

Capital Investment Plan for Fiscal Years 2020/21 and FY 2021/22

Process Improvements

In October 2018, Metropolitan's Board amended the Administrative Code to allow for an appropriation of the total amount of planned biennial CIP spending following the approval of the biennial budget and authorize work on all capital projects identified in the CIP subject to the requirements of CEQA and limits on the General Manager's authority; and delegate responsibility to the General Manager to determine whether a project is exempt from CEQA. In order to be considered a planned project, the project must be included and described in the Capital Investment Plan Appendix for the two-year budget cycle. Consistent with this action, all requests to allocate funds and proceed with planned capital projects are reviewed and approved by the Chief Engineer acting under the General Manager's authority. Upon approval, such requested funds are then transferred to the pertinent capital project. These transfers are based on both board actions and/or management decisions to initiate capital projects and/or proceed to the next phase of planned work.

Additions

Projects not described in the CIP Appendix are considered unplanned and are not included in the planned biennial spending. Unplanned projects require specific Board authorization in order to initiate the work. Eight unplanned projects totaling \$9.2 million were added to the FY 2018/19 and FY 19/20 budget as authorized by the Board. These projects were identified after adoption of the budget and included projects such as Filter Influent Valve Gear Box Replacement at the Skinner plant, Employee Village Enhancements Program, and Wadsworth Pumping Plant Sleeve Valve Refurbishment.

New Projects

This year, a total of 67 new projects, including unplanned projects that have been authorized by the Board but excluding Minor Capital projects, have been recommended by the CIP Evaluation Team to either proceed as proposed, or be staged to perform only a portion of the work in the biennial budget period, and have been incorporated into the capital programs.

Major Objectives

Below, grouped by CIP Program, are descriptions of some of the capital project major activities anticipated to be underway or completed over the next two fiscal years.

Colorado River Aqueduct Reliability

Complete construction of the 6.9 kV Power Cables Replacement, Main Pumping Plants Discharge Line Isolation Bulkhead Couplings, Pump Plant Sump System Rehabilitation, and Pumping Plants Crane Improvements projects. Complete the demonstration unit pilot project for the Main Pump, Motor, Discharge Valve and Auxiliary System Refurbishment Project. Complete the preliminary design for the Main Transformer Refurbishment Project.

Cost Efficiency and Productivity

Deploy the new Budget System Replacement and WINS Water Billing System Upgrade projects. Complete the Project Controls Reporting System project. Complete the MWDH2o.com redesign. Start the Payroll-Timekeeping Reimplementation project.

Dams & Reservoirs Improvements

Complete Diamond Valley Lake Dam Monitoring System Upgrades project. Start design of the Mills and Jensen finished water reservoir floating cover replacement projects. Complete assessment of the Lake Mathews and Lake Skinner spillways.

Distribution System Reliability

Complete the designs and start construction for the Casa Loma Siphon Barrel No. 1 Replacement and Santa Monica Feeder Cast Iron Pipe Rehabilitation Projects. Complete construction of the Orange County C&D Team Support Facility. Begin the design of the Lake Mathews Forebay Pressure Control Structure and Bypass project.

District Housing and Property Improvements Program

Complete assessments of District housing, and master planning of the villages at Hinds, Eagle Mountain, Iron Mountain, and Gene.

Prestressed Concrete Cylinder Pipe Reliability

Continue pipe procurement, valve procurement, and construction to rehabilitate the remaining PCCP portions of the Second Lower Feeder. Continue preliminary design to rehabilitate the PCCP portions of the Allen-McColloch Pipeline, Calabasas Feeder, Rialto Pipeline, and Sepulveda Feeder. Continue annual electromagnetic inspections of all PCCP pipelines.

Right of Way and Infrastructure Protection

Start construction of pipeline protection and access improvements in the Orange County Region. Continue effort to develop and certify programmatic EIRs for the western San Bernardino, Los Angeles, Riverside and San Diego County regions. Begin similar effort for the CRA.

System Flexibility/Supply Reliability

Complete construction of the Greg Avenue PCS - Pump Modifications and New Control Building project. Complete the preliminary design for modifications to the Perris Pumpback, Bypass, and Hydroelectric Plant facilities. Complete Construction of the Perris Valley Pipeline tunnel project.

System Reliability

Complete Headquarters Improvements project construction. Complete construction and startup of the Wadsworth/DVL Control and Protection Systems Upgrade project. Complete deployment of MWD Cyber Security Upgrades.

Treatment Plant Reliability

Complete construction of the Diemer west filter and basin rehabilitation projects; Jensen Modules 2 and 3 Flocculator Rehabilitation project; and Weymouth Chlorine System Upgrades projects. Complete Jensen travelling bridge and basin improvements; and Weymouth administration and control building seismic upgrades.

Water Quality/Oxidation Retrofit

Complete Weymouth Hypochlorite Feed Facilities project and Weymouth ORP completion activities. Complete the design for the Mills Bromate Control project.

Financial Projections

Planned capital spending for FY 2020/21 and FY 2021/22 is estimated to be \$250 million and \$250 million, respectively, and are planned to be funded by a combination of current operating revenues (R&R and PAYGO) and debt. Considerations for timing of nearby projects and facility shutdowns, urgency, aging infrastructure, updated service demand projections, and regulatory requirements are taken into account. Estimated capital spending is updated on a regular basis as new projects are added, other projects are completed, construction cost estimates are refined, or contracts awarded. From time to time, projects that have been undertaken are delayed, redesigned or deferred for various reasons and no assurance can be given that a project in the CIP will be completed in accordance with its original schedule.

The total planned spending for the FY 2020/21 and FY 2021/22 biennium is approximately \$500 million as shown in Figure 1 by Program. Planned spending has been estimated based on anticipated project progress and estimated costs for all ongoing and planned work for the new biennium budget period.

Figure 1 - Capital Investment Plan for FY 2020/21 and FY 2021/22 by Program

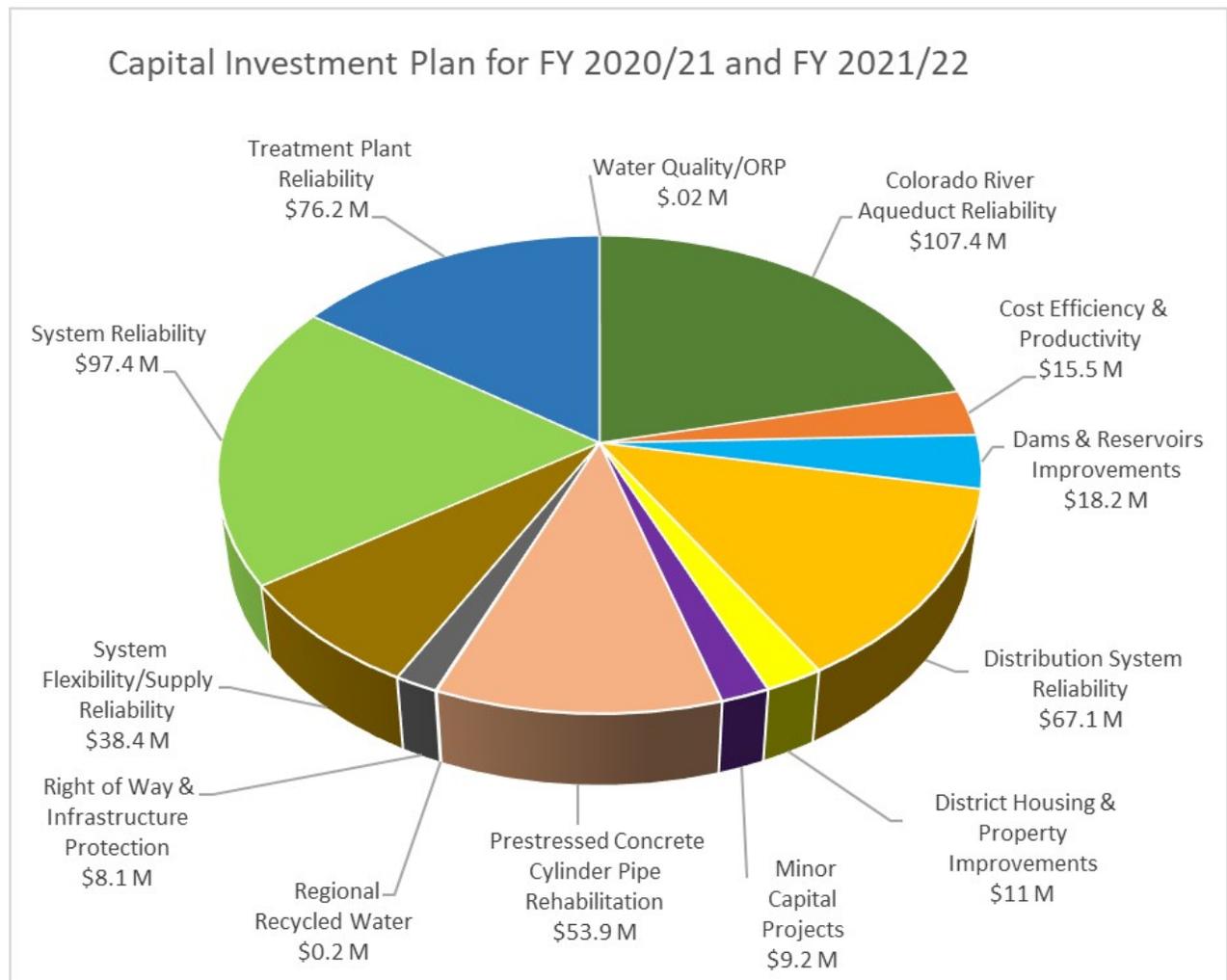


Figure 2 depicts the planned capital spending profile, including actual and projected cash flow, for the 10-year period from FY 2015/16 through FY 2024/25 and Table 4 provides a more detailed three-year outlook.

Figure 2 - CIP 10-year Window by Program FY 2015/16 through FY 2024/25

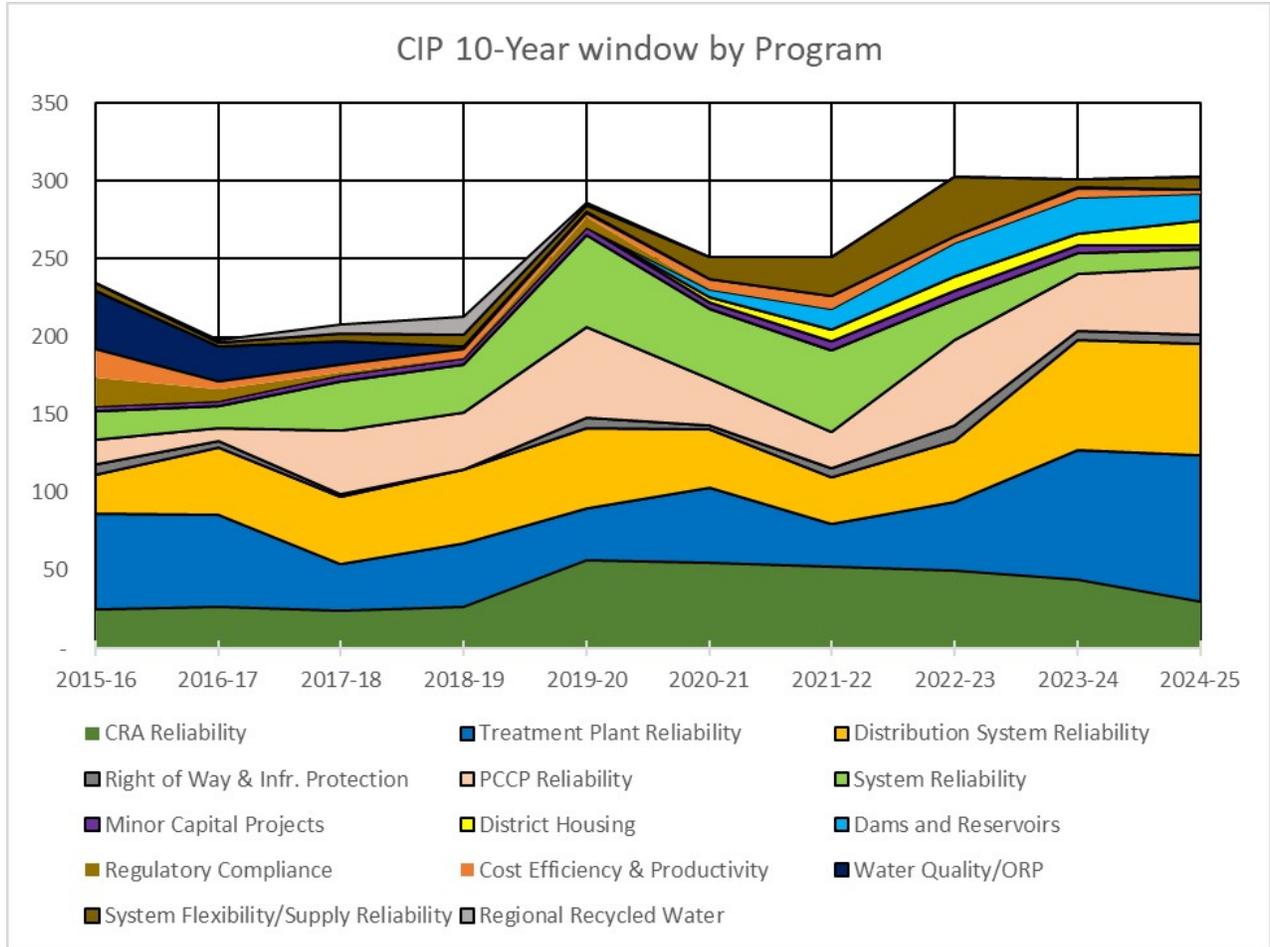


Table 4 - Three-Year Outlook

| Capital Program and Project Groups | FY 2020/21 | FY 2021/22 | FY 2022/23 |
|---|---------------|---------------|---------------|
| Colorado River Aqueduct Reliability | \$ 55,000,000 | \$ 52,370,000 | \$ 49,700,000 |
| CRA - Conveyance | \$ 5,000,000 | \$ 4,970,000 | \$ 6,700,000 |
| CRA - Electrical Systems | \$ 2,500,000 | \$ 6,500,000 | \$ 14,800,000 |
| CRA - Pumping Plants | \$ 39,500,000 | \$ 28,400,000 | \$ 16,000,000 |
| CRA - Other | \$ 8,000,000 | \$ 12,500,000 | \$ 12,200,000 |
| Cost Efficiency & Productivity | \$ 6,705,000 | \$ 8,800,000 | \$ 4,020,000 |
| Diamond Valley Lake Recreation - New/Improvements | \$ 925,000 | \$ 1,800,000 | \$ 3,500,000 |
| Diamond Valley Lake Recreation - Refurbishment & Replacement | \$ 250,000 | \$ 3,000,000 | \$ — |
| IT - Business Support | \$ 5,500,000 | \$ 4,000,000 | \$ 520,000 |
| Cost Efficiency & Productivity - Other | \$ 30,000 | \$ — | \$ — |
| Dams & Reservoirs Improvements | \$ 5,100,000 | \$ 13,100,000 | \$ 22,000,000 |
| Dams & Reservoirs - All | \$ 5,100,000 | \$ 13,100,000 | \$ 22,000,000 |
| Distribution System Reliability | \$ 37,200,000 | \$ 29,900,000 | \$ 39,300,000 |
| Pipelines, Tunnels, Canals | \$ 27,900,000 | \$ 22,800,000 | \$ 11,000,000 |
| Pressure Control Structures/Hydroelectric Plants/Service Connections/Valves & Gates | \$ 5,400,000 | \$ 3,000,000 | \$ 18,000,000 |
| Distribution System - Other | \$ 3,900,000 | \$ 4,100,000 | \$ 10,300,000 |
| District Housing & Property Improvements | \$ 3,500,000 | \$ 7,500,000 | \$ 8,700,000 |
| Housing & Property Improvements | \$ 3,500,000 | \$ 7,500,000 | \$ 8,700,000 |
| Minor Capital Projects | \$ 3,800,000 | \$ 5,400,000 | \$ 6,300,000 |
| Minor Capital Projects - All | \$ 3,800,000 | \$ 5,400,000 | \$ 6,300,000 |
| Prestressed Concrete Cylinder Pipe Rehabilitation | \$ 30,260,000 | \$ 23,600,000 | \$ 54,800,000 |
| Allen McColloch Pipeline | \$ 1,500,000 | \$ 200,000 | \$ 1,000,000 |
| Calabasas Feeder | \$ 100,000 | \$ 150,000 | \$ 1,600,000 |
| Rialto Feeder | \$ 185,000 | \$ 250,000 | \$ 600,000 |
| Second Lower Feeder | \$ 26,900,000 | \$ 21,300,000 | \$ 43,300,000 |
| Sepulveda Feeder | \$ 375,000 | \$ 500,000 | \$ 7,100,000 |
| PCCP - Other | \$ 1,200,000 | \$ 1,200,000 | \$ 1,200,000 |
| Regional Recycled Water | \$ 210,000 | \$ — | \$ — |
| Regional Recycled Water - All | \$ 210,000 | \$ — | \$ — |
| Right of Way & Infrastructure Protection | \$ 2,415,000 | \$ 5,700,000 | \$ 10,000,000 |
| Los Angeles Region | \$ — | \$ — | \$ 300,000 |
| Orange County Region | \$ 1,500,000 | \$ 1,600,000 | \$ 2,200,000 |
| Riverside/San Diego Region | \$ — | \$ — | \$ 1,000,000 |
| Western San Bernardino Region | \$ 805,000 | \$ 4,000,000 | \$ 4,300,000 |
| ROWIP - Other | \$ 110,000 | \$ 100,000 | \$ 2,100,000 |
| System Flexibility/Supply Reliability | \$ 13,600,000 | \$ 24,800,000 | \$ 38,000,000 |
| System Flexibility/Supply Reliability - All | \$ 13,600,000 | \$ 24,800,000 | \$ 38,000,000 |

| Capital Program and Project Groups | FY 2020/21 | FY 2021/22 | FY 2022/23 |
|---|-------------------|-------------------|-------------------|
| System Reliability | \$ 44,900,000 | \$ 52,500,000 | \$ 25,500,000 |
| IT/SCADA - Infrastructure | \$ 17,200,000 | \$ 21,000,000 | \$ 17,000,000 |
| Operations Support | \$ 9,000,000 | \$ 12,000,000 | \$ 5,000,000 |
| System Reliability - Other | \$ 18,700,000 | \$ 19,500,000 | \$ 3,500,000 |
| Treatment Plant Reliability | \$ 48,550,000 | \$ 27,610,000 | \$ 44,300,000 |
| Diemer | \$ 17,800,000 | \$ 5,100,000 | \$ 9,000,000 |
| Jensen | \$ 18,500,000 | \$ 14,200,000 | \$ 14,600,000 |
| Mills | \$ 480,000 | \$ 860,000 | \$ 5,600,000 |
| Skinner | \$ 470,000 | \$ 50,000 | \$ 1,600,000 |
| Weymouth | \$ 11,300,000 | \$ 7,400,000 | \$ 13,000,000 |
| Treatment - General | \$ — | \$ — | \$ 500,000 |
| Water Quality/Oxidation Retrofit | \$ 18,500 | \$ — | \$ 100,000 |
| Water Quality/Oxidation Retrofit - All | \$ 18,500 | \$ — | \$ 100,000 |

Potential Changes to the Proposed CIP

The program described below will require specific Board decisions prior to funding and authorization to proceed. Descriptions for proposed projects are included in the Individual Program Summaries section of this Appendix.

Regional Recycled Water Program (RRWP)

Construction of the Advanced Water Treatment Demonstration Plant (demo plant) was completed during the 2018/19-2019/20 biennium. The initial testing and operation of the plant to confirm treatment costs and provide the basis for regulatory approval of the proposed treatment processes and technical recommendations concerning design, operation, and optimization of the full-scale RRWP will be completed in late-2020 to early-2021. The demo plant has the flexibility to be modified in the future to test treatment processes for implementation of Direct Potable Reuse (DPR) through raw water augmentation (RWA). Funding for modifications to the demo plant to support DPR testing are not currently in the CIP and will be brought to the Board at a future date. Upon approval by the Board to modify the demo plant, the CIP will be updated accordingly.

Additional board presentations to establish a basis for a decision to proceed with the RRWP are planned during fiscal year 2019/20. Since a determination by the Board on the status of the full-scale program is still pending, the proposed biennial budget does not include any expenditures on the full-scale RRWP. In addition to potentially beginning implementation of the demo plant modifications for DPR, there are multiple scenarios for proceeding with the overall full-scale regional program over the coming biennium. Scenarios for the next two years could range from preparation of a Programmatic Environmental Impact Report (PEIR) along with its associated engineering support for CEQA documentation of the full RRWP, to initiating detailed studies and preparing the basis of design for a 20-mgd early-start treatment plant and distribution system in conjunction with the PEIR activities. Upon a decision by the Board as to how to proceed with the full-scale program, the CIP will be updated accordingly.

If approved, preparation of the PEIR and preliminary engineering would commence in fiscal year 2020/21, with a duration of approximately two years. The estimated cost for this effort is \$30 million, with approximately \$15 million expended each year and is not currently included in the CIP for FY 2020/21 and FY 2021/22. The \$30 million biennial planning budget for the RRWP is included in the Biennial Budget under O&M. Project descriptions for the RRWP are provided in the Individual Program Summaries section.

Capital Investment Plan Detail

The core of this section is the Individual Program Summaries, which provide information for each capital project that has been proposed, evaluated, and included in the budget forecast to begin or continue during and after FY 2020/21 and FY 2021/22. Scope, accomplishments, objectives and financial projections are provided for each capital program. Every project with work planned for the two budget years and beyond is listed under the appropriate Program Summary by Project Group. The information provided reflects project details current as of the time of publication and is subject to change. The Individual Program Summaries are ordered alphabetically by Program title. The information contained in the Individual Program Summaries is described in further detail below.

Key Information

For each Program, key information is highlighted at the top of the Individual Program Summary page and includes the FY 2020/21 and FY 2021/22 biennial estimate. Table 5 provides an explanation of each item.

Table 5 - Key Program Information

| Item | Description |
|---|---|
| Program Description | A brief explanation of the types of projects included in the Program |
| Fiscal Year 2020/21 Estimate | Estimate of planned spending from July 2020 through June 2021. It does not include a contingency amount. |
| Fiscal Year 2021/22 Estimate | Estimate of planned spending from July 2021 through June 2022. It does not include a contingency amount. |
| Accomplishments for FY 2018/19 and FY 2019/20 | Listing of new projects initiated and major milestones achieved during the last biennium |
| Objectives for FY 2020/21 and FY 2021/22 | Listing of projects with major milestones planned during the budget biennium with the total project estimate, estimated project completion, and the planned milestone |

Narratives

Each Individual Program Summary also contains a narrative portion that includes a description of each project planned to be underway during the two-year budget period and beyond.

Table 6 - Program Summary Index

| Program Title | Page No. |
|--|---------------------|
| Colorado River Aqueduct Reliability | 225 |
| Cost Efficiency & Productivity | 237 |
| Dams & Reservoirs | 242 |
| Distribution System Reliability | 247 |
| District Housing & Property Improvements | 269 |
| Minor Capital Projects | 270 |
| PCCP Reliability | 271 |
| Regional Recycled Water | 274 |
| Right of Way & Infrastructure Protection | 276 |
| System Flexibility/Supply Reliability | 278 |
| System Reliability | 280 |
| Treatment Plant Reliability | 293 |
| Water Quality/ORP | 310 |

Individual Program Summaries

Colorado River Aqueduct (CRA) Reliability Program

Fiscal Year 2020/21 Estimate: \$55 million

Fiscal Year 2021/22 Estimate: \$52.4 million

Program Information: *The CRA Reliability Program is composed of projects to replace or refurbish facilities and components of the CRA system in order to reliably convey water from the Colorado River to Southern California.*

Accomplishments for FY 2018/19 and FY 2019/20

- New projects initiated during the last biennium:
 - Whitewater Siphon Erosion Protection Refurbishment
 - Hinds Pumping Plant Discharge Valve Platform Replacement
 - Iron Mountain-Eagle Mountain 230 kV Transmission Line Pilot Relay Replacement
 - CRA Physical Security Improvements
 - CRA Pumping Plant Delivery Line Rehabilitation

- Major milestones achieved during the last biennium:
 - Construction completed:
 - CRA UPS Replacement
 - Intake Pumping Plant 2.4 kV Power Line Replacement
 - CRA and Iron Mountain Reservoir Panel Replacement
 - CRA Switch House Building Seismic Upgrades
 - Eagle Mountain Radial Gate Replacement
 - CRA Surge Chamber Slide Gates for Delivery Line Bypass Pipelines
 - Construction contract awarded:
 - Gene Wash Reservoir Discharge Valve Rehabilitation
 - CRA Radial Gates Rehabilitation
 - CRA Pumping Plant Sump System Rehabilitation
 - Eagle Mountain Utility Improvements
 - CRA Pumping Plants Discharge Line Isolation Bulkhead Couplings
 - CRA 6.9 kV Power Cable Replacement

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|---|------------------------|----------------------|-----------------------------------|
| Copper Basin Reservoirs Discharge Valve Rehabilitation | \$ 15,000,000 | 2024 | Begin construction |
| CRA 6.9 kV Power Cables Replacement | \$ 18,000,000 | 2022 | Complete construction |
| CRA Main Pump, Motor, Discharge Valve and Auxiliary System Refurbishment | \$ 230,000,000 | 2030 | Complete Demonstration Unit Pilot |
| CRA Main Pumping Plants Discharge Line Isolation Bulkhead Couplings | \$ 40,000,000 | 2022 | Complete construction |
| CRA Main Transformer Refurbishment | \$ 42,000,000 | 2027 | Complete preliminary design |
| CRA Pump Plant Flow Meter Replacement | \$ 20,000,000 | 2021 | Complete construction |
| CRA Pump Plant Sump System Rehabilitation | \$ 40,000,000 | 2022 | Complete construction |
| CRA Pumping Plant Storage Buildings at Hinds, Eagle Mountain and Iron Mountain | \$ 8,000,000 | 2023 | Begin design |
| CRA Water Distribution System Replacements at Hinds and Eagle Mtn. Pumping Plants | \$ 8,500,000 | 2022 | Begin construction |
| CRA Pumping Plants Crane Improvements | \$ 1,400,000 | 2022 | Complete construction |
| Gene Wash Reservoirs Discharge Valve Rehabilitation | \$ 11,000,000 | 2022 | Complete construction |
| Mile 12 Flow and Chlorine Monitoring Station Upgrades | \$ 3,000,000 | 2022 | Complete construction |

CRA - Conveyance Project Group

Cabazon Radial Gate Facility Improvements

The Cabazon Radial Gate facility is located on the CRA in the city of Cabazon within Riverside County and approximately one mile upstream of the San Jacinto Tunnel. The Cabazon Radial Gate facility was constructed in 1936 and consists of a 17-foot-wide by 16-foot-tall radial gate controlled by an electric motor actuator. The facility was designed to protect the downstream conduits and tunnels from becoming over-pressurized in the event of a blockage by diverting water into an 800-foot long, concrete-lined channel which flows into the San Gorgonio Wash. The existing radial gate, motor, and controls have reached the end of their service life and are no longer reliable.

This project will replace the discharge radial gate with a concrete weir structure. The weir system is a passive overflow system which will reject water above a set hydraulic grade and thereby prevent downstream over-pressurization. A portion of the approximately 800-foot-long discharge channel will be widened to accommodate the weir structure.

CRA Conduit Structural Protection

The CRA has 55 miles of cut-and-cover conduits where vehicles and storm water flows can cross over the aqueduct. These conduits are unreinforced concrete horseshoe-shaped structures placed upon an invert slab. At some locations, these conduits are subject to heavy vehicle loading. Few locations include existing dirt roads that cross the aqueduct with insufficient soil cover over the conduit; including locations where heavy equipment must be placed over or near the conduit for access into tunnels or siphons. This project will install new protective structures such as reinforced concrete slabs that span over the unreinforced conduits at specific locations. The slabs will protect the conduits from damage by distributing the equipment loading to the surrounding soil. Design was authorized by the Board in January 2016.

CRA Radial Gates Rehabilitation

There are a total of 14 hydraulic radial gates located along the CRA. The gates are needed to dewater and isolate various reaches of the CRA for maintenance and repairs. Inspections have identified that eight gates are corroded and require refurbishment or replacement. Protective coatings on various components of the gates have begun to fail. The existing motor actuators used to open and close the gates have also deteriorated from 70 years of use in the harsh desert environment. This project will involve refurbishment or replacement of eight radial gates. The motor actuators and the gates' electrical and control equipment will also be replaced. In addition, the concrete walls and floors within the diversion channels will be repaired. Design was authorized by the Board in May 2014. A construction contract was awarded by the Board in August 2019.

CRA Tunnels - Seismic Resilience Upgrades

The CRA is a 242-mile-long conveyance system that transports water from the Colorado River to Lake Mathews in Riverside County, including 124 miles of tunnels which were constructed in the late 1930s and was placed into service in 1941. While the CRA was constructed in accordance with current seismic codes of that time, recent seismic risk assessments of the CRA identified that some tunnels are vulnerable to damage from a strong earthquake on the southern San Andreas Fault. The scope of this project includes detailed seismic evaluations and completion of upgrades to strengthen vulnerable tunnel sections.

Eagle Lift & Eagle West Siphons Seismic Improvements

The CRA was placed into service in 1941. As the aqueduct traverses the desert, it must cross numerous drainage channels, ravines, and other natural depressions. At each crossing, the aqueduct's open channel transitions into a buried conduit (an inverted siphon) which drops below ground and passes beneath the natural surface feature. At the downstream end of the siphon, water re-emerges into the open aqueduct. Typically, siphons are cast-in-place reinforced concrete conduits, which vary in length from 150 feet to 5 miles. An initial assessment of the Eagle Lift and Eagle West Siphons identified potential slope failure of the soil covering the siphons as a result of a strong seismic event. This project will perform a detailed slope stability analysis and evaluate and implement mitigation options.

Iron Mountain Tunnel Rehabilitation

The Iron Mountain Tunnel was constructed between 1933 and 1938 as part of the CRA system. The tunnel is located downstream of the Iron Mountain pumping plant, and is eight miles long. The tunnel's cross-section is horseshoe-shaped, with overall dimensions of 16 feet high by 16 feet wide. Longitudinal and transverse cracks up to 1 inch wide have developed along a 2,500-foot-long stretch of the tunnel. This project will mitigate the cracks with focus on tunnel strengthening and corrosion protection. Preliminary design was authorized by the Board in October 2010.

Mile 12 Flow and Chlorine Monitoring Station Upgrades

One of the CRA's critical points for monitoring flow rates and chlorine levels is located at Mile Marker 12 (Mile 12) along the aqueduct. Monitoring equipment includes a set of flowmeters with instrumentation, chlorine analyzers, communication equipment, solar panels, and batteries. Although the equipment has performed well, it has exceeded its life span and is beginning to fail. This project will replace the existing deteriorated flow meters with new ultrasonic models that are compatible with other meters in use throughout the CRA; relocate the data and communications equipment from the underground manhole to a new aboveground monitoring station with air-conditioned cabinets to enable stable operation; and construct a reliable power source. Construction was authorized by the Board in August 2010.

Whitewater Tunnel No. 2 Seismic Upgrades

The CRA consists of five pumping plants, 124 miles of tunnels, 63 miles of canals, and 55 miles of conduits, siphons, and reservoirs. One of the tunnels, CRA Whitewater Tunnel No. 2, is a 1.5-mile long; 16-feet-high by 16-feet-wide horseshoe-shaped tunnel that parallels closely to the southern San Andreas Fault and crosses a splay of the fault approximately one-third mile from its west portal. A recent seismic risk assessment of the CRA identified that this tunnel is vulnerable to major damage from a strong earthquake on the southern San Andreas Fault. This project will perform near-term upgrades to strengthen vulnerable tunnel sections at the east and west portals of this tunnel and will improve access at the west portal. Furthermore, in order to expedite post-earthquake repairs of damaged tunnel sections, the design of a new bypass tunnel will be prepared in advance, steel sets will be procured and stockpiled, and tunnel repair contractors will be prequalified so that specialized equipment and crews may mobilize rapidly. Preliminary design was authorized by the board in December 2017.

CRA - Electrical Systems Project Group

Standby Diesel Engine Generator Replacements

Back-up power for critical auxiliary systems at the Iron Mountain, Gene, and Intake pumping plants is provided by stand-by diesel generators. The standby generators are over 50 years old, require frequent repairs, and have reached the end of their service lives. In addition, upgrades to the generators' ancillary equipment are planned to meet current fire codes and environmental regulations. This project will improve the reliability of emergency power for critical auxiliary systems at the pumping plants. The scope of the project includes relocation and installation of new generators. The replacement generator will include alarms, valves, meters, and a control system capable of automatic start-up upon loss of primary power, automatic transfer back to primary power once the normal source is reestablished, and remote status monitoring. Preliminary design for all three pumping plants' standby generators was authorized by the Board in April 2008; and final design and equipment procurement for Iron Mountain standby generator was authorized by the Board in March 2012.

Electrical Power Distribution Upgrades - Gene, Iron Mountain, Eagle Mountain and Hinds Pumping Plants

The 2.4 kV electrical power distribution system at all five Desert pumping plant facilities conveys power from the MWD-owned 2.4 kV switchyard to all areas within the property confines, including the operations and maintenance (O&M) areas and the villages. The power is stepped down from 2.4 kV, typically by a pole-mounted transformer, to the required voltage based on the end-user's requirements, usually 120 V for houses and buildings, or 480 V for workshops. The existing breakers are no longer common in the power industry, and spare parts are difficult to obtain.

This project will replace the existing electrical power distribution systems at Gene, Iron Mountain, Eagle Mountain and Hinds Pumping Plants with new distribution systems. The work will include replacing existing 2.4 kV breakers with 4160 V breakers, and replacing associated cables, conduits, feeders, risers, wooden poles and transformers. Underground power distribution will be used when feasible. This project will improve the reliability of water deliveries and will optimize maintenance.

Black Metal Mountain 2.4 kV Electrical Power Upgrade

Black Metal Mountain (Black Metal) Site No. 1 and Site No. 2 are two of Metropolitan’s communication sites, located in the San Bernardino Mountains. The sites are situated on top of a mountain and provide line-of-sight propagation to subsequent communication sites. Given their prime location, the communication sites on Black Metal Mountain house communication equipment for Metropolitan, several state and local government agencies, and local radio stations and cellular service providers. The existing power line that serves the two communication sites is aging and deteriorated, and is located in rocky, mountainous terrain, with some poles on the edge of 600-foot cliffs. This project will design and construct the replacement of the existing 2.4 kV power line that serves MWD’s Black Metal Mountain communication sites. The work will include installation of new power poles, larger conductors to increase the available power to the sites, and service roads where feasible, to allow access for maintenance.

CRA 230 kV Transmission Line Improvements

The CRA has an extensive 230 kV transmission system that originates from Hoover Dam and supplies power to all five pumping plants. This 305-mile long transmission system was installed in the 1930s and consists of approximately 75-foot-high steel towers with concrete and wood footings, aluminum and copper conductors and supports to attach the conductors and insulators to the towers. Spans between the towers average 1,200 feet with varying ground elevations. Vertical clearances between the lowest conductor and the ground in a span can vary with temperature, wind speeds, and power loads. Over the years, operating under maximum power loads and extreme desert temperatures has led to insufficient vertical clearances as required by the current electrical standards. This project will assess ground clearances of the conductor spans and increase clearances, as needed, by raising the heights of existing towers and/or adding new towers between spans, and construct tower refurbishment or replacement.

This project will also rehabilitate and improve substations, switching stations, and control rooms related to the CRA’s 230 kV transmission system in order to comply with NERC (North American Electric Reliability Corporation) standards, increase system reliability, and reduce the risk of unplanned CRA outages. Rehabilitations and upgrades include new relays at Eagle Mountain Pumping Plant to mitigate potential cascading power outages from a stuck breaker scenario at Eagle and installation of physical security systems at Gene and Eagle Mountain pumping plants control rooms and switch yards (NERC requirements); replacement of outdated bank protection relays at Intake, Gene, Iron Mountain and Hinds pumping plants; replacement of outdated 230 kV disconnect switches at Camino Switching Station and at the Gene and Iron Mountain 230 kV transfer buses; installation of a new 230 kV circuit breaker at Iron Mountain to enable isolation of the Iron-Eagle 230 kV transmission line without disruption of CRA water deliveries; and, purchase of SCE circuit breakers which are integrated with the CRA’s 230 kV system at Gene and Eagle Mountain pumping plants in order to give MWD greater flexibility without having to rely on SCE.

CRA 6.9 kV Power Cable Replacement

There are a total of 45 primary pumps and motors at the five CRA pumping plants. Power is transmitted to the motors via 3-inch-diameter cables which run through a tunnel that connects each switch house to each pump house. The quantity of cables varies from nine to 27 per plant. These cables were installed in four phases from 1939 through 1959. After 55 to 75 years of continuous service, the power cables have deteriorated and need to be replaced. Oil has begun to leak through cracks in the lead jacket, at the cable connection joints, and at the cable termination points. Frequent repairs are required to address the leaks and maintain the cables’ insulating capacity. This project includes the replacement of the deteriorated main power cables at each of the five CRA pumping plants. The Board awarded a construction contract in February 2019.

CRA Auxiliary Power Systems

All five CRA pumping plants have medium and low voltage systems that were constructed to the design standards of the 1930s-1950s. They provide power for general lighting, cranes, computers, shop equipment, and critical equipment such as the pumping plant sump pumps and lubrication oil pumps. Over the years, numerous additional electrical loads have been added to the auxiliary power systems. As a result, the distribution panel capacity limits have been exhausted, and some wiring is now undersized. The scope of this project includes upsizing the distribution panels to allow additional capacity and space for future loads and replacing the cables and conduits to comply with current National Electrical Code and safety standards. Preliminary investigations were authorized by the Board in March 2016 for all five pumping plants. Preliminary design for Iron Mountain Pumping Plants was authorized by the Board in May 2018.

CRA Main Transformer Rehabilitation

Seven transformers provide electrical power to each CRA pumping plant to maintain continuous operation. All existing transformer units are original equipment, with many dating from the 1940s. Recent inspections revealed oil leakage and other signs of aging for some of the transformers. Failure of an existing transformer would disrupt power supply to a pumping plant and interrupt water delivery. The scope of the project includes rehabilitation of existing transformers, replacement of transformers, or the addition of spare transformers along with spill containment structures. This work also includes replacement of leaky circulating oil pumps that are used to cool the transformers and construction of secondary spill containment for the transformer banks. Preliminary design was authorized by the Board in May 2020.

CRA Pump Plants 2.3 kV and 480 V Switch Rack Rehabilitation

All five CRA Pumping Plants have a 2.3 kV and 480 V switch racks that are the central power distribution for the 2.3 kV, 480 V and 120 V that feed multiple medium and low voltage critical equipment within the pumping plants. These switch racks have been in service since the original construction of the CRA. The equipment is old, obsolete and replacement parts are difficult to obtain. This project will rehabilitate the 2.3 kV and the 480V switch racks at all five CRA pumping plants to ensure the equipment meets the current safety and electrical codes and provides a reliable power supply to the plants.

CRA - Pumping Plants Project Group

CRA Main Pump, Motor & Discharge Valve Refurbishment

Each of the five CRA pumping plants has nine main pumps that lift the water to the required elevation necessary to continue flow down the aqueduct. The 45 main pumps rely on multiple auxiliary systems including lubricating oil systems, circulating water systems, controls and instrumentation systems, discharge valves, electrical and control panels, and individual equipment components. In the mid-1980s, a major rehabilitation project was undertaken on the 45 main pumps. As a result, the 45 main pumps have performed well over the nearly 30 years since the rehabilitation work was completed. However, the pumps are now showing signs of deterioration caused by continuous operation over that length of time. While that project successfully extended the service life of the pumps and increased their hydraulic capacity, the pump auxiliary systems were not addressed at that time. The pump auxiliary systems are from the original CRA construction and are now deteriorating and need to be replaced. An assessment of the main pumps, motors, and their auxiliary systems at all five CRA pumping plants will capture current operating conditions, create updated baseline documents of all existing equipment and systems, and provide replacement or rehabilitation recommendations for all pump and auxiliary system components. Preliminary investigations were authorized by the Board in October 2016, and an agreement to provide condition assessments for the main pump motors was authorized by the Board in December 2019. This project will refurbish the 45 main pumps and their auxiliary systems, including lubricating oil systems, circulating water systems, controls and instrumentation systems, discharge valves, electrical and control panels, and individual equipment components, as deemed appropriate by the assessment.

CRA Main Pumping Plants Discharge Line Isolation Bulkhead Couplings

Each of the nine main pumps at the five CRA pumping plants discharges the water into an individual 6-foot diameter discharge line. The nine discharge lines then merge into three 10-foot diameter pipelines that convey flow to the top of the lift and discharge into a headgate structure which empties the water into the next section of the aqueduct. Isolation of a single pump or its discharge valve, currently requires a lengthy flow reduction where three pumps have to be removed from service while cutting and welding activities are performed to install a steel bulkhead in one pump's 6-foot discharge line. This operation is labor-intensive and requires more than 72 hours to complete the isolation and removal of the isolation bulkhead. This project will install isolation couplings in the 6-foot discharge lines downstream of each main pump discharge valve. The discharge line couplings will allow individual pump units and discharge valves to be isolated significantly faster by eliminating the current cutting and welding process required to isolate a unit; thus, minimizing impacts to overall pumping capacity. A construction contract was awarded by the Board in August 2019.

CRA Main Pumping Plants Sand Removal System

At each of the five CRA pumping plants, water is withdrawn from the CRA, filtered to remove large debris and sand, and then pumped through a circulating water system. The circulating water system feeds the pump house service water system, the cooling system at each pump unit, the fire water system, the irrigation water system, and the domestic water treatment system. The existing filtration system is not designed to strain out fine silts. Consequently, the fine silt has built up as sediment in the circulating water systems leading to excessive wear and failure of equipment such as pump packing, cooling water piping, and heat exchangers. This project will upgrade the filtration system to remove fine silt and eliminate sediment build up and refurbish any identified damaged components.

CRA Main Pumping Plant Unit Coolers and Heat Exchangers

Each of the five CRA pumping plants has nine main pumps. Each main pump has a cooling system to cool various components of the pump system. At each pump house, water is pumped through a circulating water system, which feeds multiple unit coolers and heat exchangers for each individual main pump unit. Over the years, the unit coolers have developed many leaks. Lack of sufficient cooling water could cause equipment overheating, and the leaks could damage nearby electrical equipment. This project will replace, refurbish, or upgrade the cooling system at each pump unit.

CRA Pump Plant Flow Meter Replacement

Acoustic flow meters are installed at each of the five CRA pumping plants on each 10-foot-diameter delivery lines. Flow measurements are used to adjust pumping rates and balance the flows from plant to plant. The existing meter units have begun to deteriorate due to their age and exposure to harsh desert conditions. Continued loss of accuracy could lead to incorrect flow adjustments or unsynchronized pumping rates, which could cause flooding at the plants or overtopping of the aqueduct. This project will install new acoustic flow meters on the delivery lines which will connect to nearby flow meter consoles housed inside new pre-fabricated equipment enclosures. Construction was authorized by the Board in June 2013.

CRA Pump Plant Sump System Rehabilitation

Each of the five CRA pumping plants has two independent main sumps that collect water leakage from the main pumps and discharge valves. Each main sump is approximately 9 feet wide, 20 feet long, and 35 feet deep, and can hold up to 48,000 gallons, or approximately one day's worth of leakage water. The sump system pumps this water back to the pumping plant's main intake manifold or to its forebay, depending on the plant. The 70-year-old sump piping systems and support structures are deteriorating and have exceeded their service lives. Failure of the sump piping systems has the potential to cause extensive flooding and damage to valves and pumps within the pumping plants. This project will rehabilitate the pumping plant sump systems, including replacement of corroded sump mechanical equipment, piping, and access structures at all five CRA pumping plants. Access features will be upgraded by replacing corroded catwalks, ladders and handrails within the sumps. This project will also rehabilitate circulating water equipment and piping systems, which are in the sump area. A construction contract was authorized by the Board in December 2018.

CRA Pump Plants Circulation Water Systems

Each of the five CRA pumping plants has nine main pumps. Each of these pump units use cooling equipment to cool various components of the pump system that feeds from the plant's circulating water system. This system has a loop with branch connections and an isolation valve at each unit. The piping and the valves that supply the circulating water systems run through the entire length of the plants and are all from the original CRA construction. The piping and the valves are now showing signs of deterioration. They are clogged, corroded and leaking. This project will replace and upgrade the circulation water systems for each pumping unit.

CRA Pumping Plants Crane Improvements

All five CRA Pumping Plants have a single overhead bridge crane which spans the motor room floor and a portable bridge crane for the individual pump bay below the motor room floor. These overhead cranes were installed in the pumping plants during the original CRA construction and have been in operation since 1939. The cranes are used to raise, shift, and lower main pump components and motors for maintenance and replacement. These cranes were rehabilitated in the late 1980s. They have now reached the end of their service life where spare parts for the original crane components are difficult to obtain or no longer available. Parts which were replaced in the 1980s are outdated and the electronic features are no longer supported by vendors. This project will replace all the overhead bridge cranes on the motor room floor and the portable pump-bay cranes below the motor room floor at all five pumping plants. The replacement includes the bridges, trolleys, hoists, drive trains and the system controls.

CRA Pumping Plants Delivery Line Rehabilitation

Each of the nine main pumps at the five CRA pumping plants discharges the water into individual six-foot diameter discharge lines. The nine discharge lines then merge and transition into three 10-foot diameter pipelines, Delivery Line Nos. 1, 2 and 3, that convey flow to the top of the lift and then discharge into a headgate structure which empties the water into the next section of the aqueduct. These delivery lines vary in length from 500 feet to 1,400 feet up steep and rocky slopes. The five Delivery Line No. 1s were constructed in the 1930s and were lined with coal tar enamel to protect the interior of the pipe from corrosion. After 80 years of service, the existing coal tar enamel lining on Delivery Line No. 1 at each plant is cracking, flaking, and the steel is starting to corrode. The mortar linings for Delivery Line Nos. 2 and 3 are still in good condition and do not require repair.

Additionally, depending on the length of each delivery line there are a total of three or four expansion joints located along the line. These expansion joints are deteriorated and showing signs of corrosion. This project provides a comprehensive rehabilitation of the delivery lines at each of the five CRA pumping plants, including replacement of the coal tar enamel with a cement mortar lining, expansion joints, and minor coating repairs. Under the General Manager's authority, preliminary investigations were authorized in June 2019.

CRA Pumping Plants Water Treatment Systems Replacement

All five of Metropolitan's Pumping Plants are located in remote areas of Riverside and San Bernardino Counties where municipal water treatment systems are not available. Each plant is instead served by a community on-site water treatment system. These on-site treatment systems are skid-mounted membrane filtration units that include a strainer, a pair of activated carbon vessels, and a domestic water storage tank. These systems have been in continuous operation for 25 years and now suffer from frequent membrane and pipe failures. This project will replace the skid-mounted water treatment systems in its entirety. Design was authorized by the board in July 2018.

CRA Pump Plant Reservoir Spillway Auto Rejection - Iron Mountain and Eagle Mountain

The Iron Mountain and Eagle Mountain Reservoirs are located on the upstream side of the Iron Mountain and Eagle Mountain pumping plants, respectively. The reservoirs dampen fluctuations in flow between the five pumping plants. Each reservoir contains a spillway which allows discharge of water to the desert in the event of a power outage of the main pumps. The two spillways were designed in the 1930s to safely reject up to approximately 1,200 cubic feet per second (cfs). The pumping plants were expanded in the 1950s and the aqueduct can now operate up to approximately 1,750 cfs. Rejection of flows greater than 1,200 cfs would cause uncontrolled release of water at these two reservoirs, which could damage nearby facilities and public roads or property. This project will modify the reservoir spillways to allow safe rejection of up to 1,750 cfs of water in the event of a power outage of the main pumps.

Erosion and Drainage Control Protection for CRA Switchracks and Ancillary Structures

The five CRA pumping plants are located in remote areas of the California desert which are periodically subjected to flash floods that carry high volumes of water, silt, and debris. During major storm events, the pumping plants' pump houses and support facilities are susceptible to flooding and deposition of silt and debris. In recent years, at several of the plants, debris flows have affected various critical electrical facilities. This project will include site grading, addition of perimeter drainage channels to intercept offsite flows, upsizing of storm drain culverts and extension of patrol roads to access the new storm drain facilities for maintenance. Design was authorized by the Board in January 2016.

Gene and Intake Pumping Plant Outlet Structure Gate Rehabilitation

Each of the five CRA pumping plants has nine main pumps that lift water from the pump house through a series of converging delivery lines that convey water from the pump house to a headgate structure located at the top of a hill. These structures then convey water to the downstream portion of the aqueduct. Flow from each headgate structure is regulated by three nine-foot square steel gates. Recent inspections at the Intake and Gene pumping plants have revealed that the protective coatings on various components of the gates have begun to crack and peel. This project will recoat the six headgate structure outlet gates at the Intake and Gene pumping plants in order to prevent metal loss due to corrosion.

Hinds Pumping Plant Discharge Valve Pit Platform Replacement

At each of the CRA pumping plants water is pumped from the plants' intake manifold, through the main pumps and out of the discharge valves. From the discharge valves, water travels through the delivery lines and into the aqueduct. The discharge valves are located in small concrete pits below the pump plant floor room. At the Hinds Pumping Plant, the concrete pit is equipped with a raised platform due to the deep pit. The platform is necessary to maintain the discharge valve's ancillary equipment. After over 75 years of service in a humid environment created mainly from the pump cooling water discharge, the metal platform has corroded significantly and needs to be replaced. This project will replace the discharge valve platform and relocate cooling water discharge piping in all nine discharge pits at the Hinds Pumping Plant. Under the General Manager's authority, preliminary design was authorized in November 2018.

Iron Mountain, Hinds & Eagle Mountain Hazardous Waste Containment

Hazardous wastes such as chemicals, oil, paint, paint thinners and antifreeze are generated through routine operations at the Iron Mountain Pumping Plant. Hazardous wastes are collected and placed into either metal or plastic drums ranging in size from five to 55 gallons. The existing hazardous wastes are then stored in a fenced temporary storage area. This project will replace the existing hazardous waste storage facility with a prefabricated, code-compliant, hazardous waste storage container.

Seismic Upgrades of CRA Support Facilities

A recent initial seismic risk assessment has revealed that several CRA support structures may be vulnerable from a major seismic event. These support structures include office and maintenance buildings, guest lodges, and dining and recreation halls located at Hinds, Eagle Mountain, Iron Mountain and Gene Pumping Plants. This project will perform detailed seismic assessments and retrofit the support structures if necessary.

CRA - Other Project Group

Copper Basin Reservoir Discharge Valve Rehabilitation & Meter Replacement

The Copper Basin Reservoir provides critical storage that enables flowrates along the CRA to be stabilized and controlled. If the reservoir needed to be drained rapidly in the event of an emergency, the discharge valves located at the base of the dam would be opened to safely release the water. Following 70 years of continuous service, the valves have begun to leak and need to be replaced. The dam is under the jurisdiction of the California Division of Safety of Dams (DSOD), which requires that the discharge valves be fully operational at all times. The project scope includes replacement of the fixed cone valves at the base of the dams; upgrade of the electrical systems; and access improvements to safely enable construction personnel, materials, and equipment to reach the work site. Design was authorized by the Board in February 2015.

In order to determine how much water is released to downstream pumping facilities, flow out of the Copper Basin Reservoir is measured at the entrance to Whipple Mountain Tunnel. Flow meters were installed at this location to collect information that is used to adjust the flow rate through the Copper Basin Reservoir outlet gate and the flow rates at each pumping plant, and to determine the amount of chlorine injected into the CRA to control quagga mussels. The existing flow transducers and meters were installed in 2007 and must be replaced to ensure reliable CRA water deliveries. This project will replace the flow meters, transducers, and cabling in the CRA's Whipple Mountain Tunnel.

CRA Desert Region Security Improvements

CRA facilities are critical components of Metropolitan's water delivery system. These facilities include five pumping plants and the El Camino Electrical Substation. These facilities have inadequate perimeter fencing. This project will install physical security improvements such as fencing, cameras, motion detectors, remote speakers, card readers, and lighting at Metropolitan's CRA pumping plants and at the El Camino Electrical Substation. This project will also include road improvements at the main entrances to the pumping plants and integration of security devices with Metropolitan's security system.

CRA Erosion Protection

The CRA is comprised of 55 miles of cut-and-cover conduits. The cut-and-cover conduits are arch or horseshoe shape, unreinforced, cast-in-place concrete. In most locations along the CRA, the overlying soil protects the cut-and-cover conduits from rock and debris flows. However, at narrow ravine crossings, heavy storm events often erode the soil and expose the conduits making them vulnerable to structural damage from the rock and debris flows. This project will provide erosion protection features such as gabion structures or concrete slabs; including grading of the eroded areas to protect the conduit. In addition, diversion berms or concrete swales will be constructed to divert storm flows over the concrete slabs. Preliminary Design was authorized by the Board in January 2016.

CRA Pumping Plant Storage Buildings at Hinds, Eagle Mountain and Iron Mountain

Between 1950 and 1955, several metal-sided buildings with timber frames were built at the CRA pumping plants to store equipment, spare parts, and maintenance supplies. Two of these buildings have been replaced at the Gene Pumping Plant; however, four original buildings still remain in service. These buildings have deteriorated after 65 years of service in the harsh desert environment and no longer seal properly to prevent rain and dust from entering the interiors. This project will replace the four remaining deteriorated storage buildings. As part of the design considerations, an assessment will be conducted to determine space requirements for storage of equipment and parts to support ongoing maintenance activities and upcoming capital rehabilitation work at the pumping plants. Preliminary design was authorized by the board in August 2016.

CRA Village Water, Sewer & Asphalt Replacement

All five of Metropolitan's pumping plants are located in remote areas of Riverside and San Bernardino Counties where municipal water distribution systems are not available. Each plant is instead served by a community on-site water treatment system. Water from the CRA is treated and conveyed to each village house and to the industrial portions of the pumping plants through a gravity-fed water distribution system which consists of distribution piping, isolation valves and valve boxes. Recent inspections of the distribution systems have found blockages, leaks, taste and odor problems, and root intrusion. This project will replace the domestic water distribution systems at all five CRA pumping plants which include the main line pipes, building laterals, new backflow prevention devices, valves, meters and remote water quality analyzers. Final design was authorized by the board in December 2017.

Municipal wastewater collection and treatment facilities are not available where the pumping plants are located. The pumping plants are served by community on-site wastewater systems. These on-site systems collect, treat, and dispose of domestic wastewater generated from bathrooms, kitchen facilities, maintenance buildings, guest lodges, and staff residences at the plants. The on-site systems consist of three primary components: community septic tanks and leach fields; collector lines located throughout the pumping plants which convey wastewater to the septic tanks; and sewer laterals which convey wastewater from individual buildings to the collector lines. The existing wastewater systems at the plants have deteriorated through continual use and need to be replaced. This project will replace the wastewater systems at the pumping plants. The systems will include new main-line pipes, building laterals, septic tanks and leach fields. Design was authorized by the Board in December 2012 for Gene and Iron pumping plants, while preliminary design was authorized by the Board for Intake Pumping Plant in January 2012.

The asphalt roadways at the pumping plants provide access between buildings and the villages for Metropolitan staff, residents, and visitors. There is a total of approximately 30 acres of asphalt-paved roadways and surfaces at all five pumping plants, and these asphalt surfaces are over 30 years old. Due to the harsh desert conditions and deterioration of the subgrade over time, potholes and cracks have developed throughout the villages. The planned upgrades to the roadway pavement include placement of a new layer of asphalt on less distressed areas throughout the CRA villages; removal and replacement of more heavily damaged roadways; and grading and installation of culverts to improve drainage. Design was authorized by the board in July 2018.

Gene Wash Reservoir Discharge Valve Rehabilitation

The Gene Wash Reservoir provides critical storage that enables flowrates along the CRA to be stabilized and controlled. If the reservoir needed to be drained rapidly in the event of an emergency, the discharge valves located at the base of each dam would be opened to safely release the water. Following 70 years of continuous service, the valves have begun to leak and need to be replaced. The dam is under the jurisdiction of the California Division of Safety of Dams (DSOD), which requires that the discharge valves be fully operational at all times. The project scope includes replacement of the fixed cone valves at the base of the dam; upgrade of the electrical systems; and access improvements to safely enable construction personnel, materials, and equipment to reach the work site. Design was authorized by the Board in February 2015. Metropolitan's Board awarded a construction contract in December 2019.

Intake Pump Plant Road Improvements

The 1.75-mile long asphalt access road into the Intake Pumping Plant travels between a large hill and Lake Havasu. At approximately the midpoint of the access road, it crosses a culvert that drains storm runoff from the hillside into the lake. This culvert is undersized, has partially collapsed, and fills with debris from an unlined wash during rain events. After rain events, Metropolitan staff must clear debris from the culvert in order to prevent rain water from overtopping the culvert and eroding the access road. This project will replace the existing culvert with a new culvert and deteriorated portions of the asphalt road.

Cost Efficiency and Productivity Program

Fiscal Year 2020/21 Estimate: \$6.7 million

Fiscal Year 2021/22 Estimate: \$8.8 million

Program Information: The Cost Efficiency and Productivity Program is comprised of projects to upgrade, replace, or provide new facilities, software applications, or technology, which will provide economic savings that outweigh project costs through enhanced business and operating processes.

Accomplishments for FY 2018/19 and FY 2019/20

- New projects initiated during the last biennium:
 - Learning Management System
 - MWDH20.com Redesign
 - Budget System Replacement

- Major milestones achieved during the last biennium:
 - Implemented the new Learning Management System
 - Enterprise Content Management (ECM) substantially completed restructuring and consolidation of data on Metropolitan’s shared drives and eliminated redundant, obsolete and trivial content.

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|--|------------------------|----------------------|-------------------------|
| Diamond Valley Lake Wave Attenuator Replacement | \$ 3,500,000 | 2022 | Complete design |
| Budget System Replacement | \$ 1,800,000 | 2021 | Complete deployment |
| Diamond Valley East Marina, Trails, and Visitor Center | \$ 16,850,000 | 2021 | Begin studies |
| MWDH20.com Redesign | \$ 2,040,000 | 2023 | Complete redesign |
| Payroll-Timekeeping Reimplementation | \$ 1,300,000 | 2022 | Begin project |
| Project Controls and Reporting System | \$ 5,800,000 | 2020 | Complete project |
| WINS Water Billing System Upgrade | \$ 3,500,000 | 2022 | Complete deployment |
| Supplier Portal Implementation | \$ 600,000 | 2022 | Complete deployment |
| Services Procurement Application | \$ 800,000 | 2022 | Complete deployment |
| Digital Assets Optimization | \$ 1,340,000 | 2022 | Complete implementation |

Cost Efficiency & Productivity - Other Project Group

Yorba Linda Power Plant Modifications

This project will modify the Yorba Linda Power Plant to accommodate the new hydraulic conditions brought on by construction of ozonation facilities. The scope of work includes: 1) replace the existing Pelton-type impulse turbine with new Francis-type turbine capable of operating under a pressurized discharge condition; 2) modify power plant structure and intake/discharge conduits; 3) modify I&C and SCADA systems for the new power plant; 4) modify Diemer power metering to use the output from the plant to feed Diemer's power; and 5) negotiate new utility power sale agreements.

DVL Recreation - New/Improvements Project Group

Diamond Valley Lake East Marina Utilities

Diamond Valley Lake (DVL) offers recreational opportunities to the region including boating, fishing, hiking, and biking. The facility supports 4,500 acres of on-water activity, 28 miles of trails, and 13,500 acres of protected open space. This project will extend the existing water, sewer, gas, and communication facilities from the intersection of Searle Parkway and Angler Avenue to the DVL East Marina to support existing operations and future development. The construction of the new infrastructure will replace existing failing tanks which are filled with trucked-in water to service the Marina store, enhance utility service reliability, and serve to comply with flows and pressures required to develop the Marina into a self-sustainable recreational facility.

Diamond Valley Lake Visitor Experience Improvement

This project will enhance the visitor experience at DVL. Multiple projects will be studied, planned and implemented to expand recreational and educational outreach enhancing Metropolitan's resource protection and conservation message. An initial study on the recreation and educational opportunities at the DVL properties will be used to document and prioritize the various investment options. There are various outreach opportunities to be evaluated including updated signage at the lake and trails; outdoor classrooms; augmented reality kiosks to introduce watersheds and protected open space; and facility and exhibit improvements to the DVL Visitor Center, formerly known as "The Center for Water Education."

Diamond Valley Lake-Lake Skinner Trails

This project will create a regional network of trails connecting DVL and Lake Skinner as identified in the DVL Memorandum of Intent. The Lakeview Trail and North Hills Trail at DVL and certain trails at Lake Skinner already exist. Metropolitan jointly funded a trails study with Riverside County Regional Park and Open-Space District to investigate trail alignments connection feasibility through a Consultant agreement. The proposed trail alignments minimize impacts to the Southwestern Riverside County Multi-Species Reserve and link DVL and Lake Skinner using existing roads to the greatest extent possible. Trail uses under consideration include hiking, bicycling, and horseback riding.

DVL Recreation - Refurbishment & Replacement Project Group

Diamond Valley Lake Floating Wave Attenuator

The existing floating wave attenuator (FWA) has been operational since 2006 as part of a two-phase approach. Phase 1 was completed by installing one 800-foot FWA. Phase 2 was to provide an additional attenuation system but was not implemented. Water levels at Diamond Valley Lake have fluctuated with severity and frequency for the last several years due to draw-down activities during drought conditions, then rebounding during the rainy seasons. Due to age and changing conditions, the concrete sections of the FWA have significantly degraded and the reinforcing bars are exposed to the elements which have accelerated corrosion of the existing FWA system. Under the General Manager's authority, preliminary investigations were authorized in August 2019.

IT - Business Support Project Group

Access Applications Upgrade

Microsoft Access (MS Access) is the database platform currently used by Metropolitan for smaller departmental applications used by Administrative Services, Human Resources, External Affairs, WSO, and Executive Management. Several applications require enhancements, such as mobile capabilities and a greater database capacity, that are not available through MS Access. This project will migrate selected applications from MS Access to Azure ("the cloud") to securely implement mobile access.

AP Imaging Replacement

Metropolitan's existing Accounts Payable Imaging Solution is not performing as needed and needs to be replaced with a functioning system. This project will implement the following: scanning of vendor invoices; validation of invoice data per business process rules; retention of invoice images on-line and uploading of the validated data (POETA) to Oracle Financials Accounts Payable application. Current technology will be used to "read" the incoming invoices as they are scanned, and create the data values to update the Oracle A/P system. The process improvements will increase staff efficiency and productivity and will eliminate the need for filing and storage of hardcopy invoices.

Budget System Replacement

This project delivers a replacement system for the 12-year-old budgeting system, which produces the capital and O&M budgets.

Digital Asset Optimization

The Digital Asset Optimization project will remove redundant, obsolete and trivial (ROT) information from files on Metropolitan's network file shares (NFS). This work is being performed to allow for more effective and efficient searching and collection of information as it pertains to public requests, legal holds and other Metropolitan needs for information. Additionally, the data will be categorized, and metadata captured for easier retrieval capabilities.

Enterprise Content Management

The Enterprise Content Management (ECM) application will classify and manage electronic documents and other media to allow for easy retrieval, review, and destruction of information in accordance with Metropolitan's records retention schedule. In addition, the new ECM application will allow Metropolitan to more effectively and efficiently manage its digital asset needs for business needs to respond to requests under the California Public Records Act (CPRA), and for eDiscovery purposes, and will automate compliance with records retention policies. This project includes designing a taxonomy for storing unstructured data and the development of a thesaurus to support the implementation of Metropolitan's ECM application. Phase I was authorized by the Board in July 2017. Phase II of this project completes the design and delivers the initial deployment of the enterprise content management software into the Metropolitan environment. The system will allow for the organization, collaborations and automated enforcement of records retentions policies to non-structured electronic media. The final phase III will deliver the balance of the deployment of the enterprise content management software throughout Metropolitan.

MWDH20.com Redesign

The existing website will be replaced with a new site offering more functionality and capability to spread Metropolitan's mission of providing water to Southern California.

Payroll-Timekeeping Reimplementation

This project will re-implement PeopleSoft payroll and will replace the current timekeeping software with a package that provides better integration with the payroll software and a better user interface. The current payroll and timekeeping applications both have deficiencies that have caused significant compensation issues for employees and have resulted in the need for excessive manual corrections by payroll staff. This project will enhance workforce productivity by simplifying access to business information and will maintain sound business practices and fiscal integrity.

Project Controls and Reporting System

The Project Controls and Reporting System (PCRS) will replace Metropolitan's existing project control system that is now functionally obsolete. The PCRS will integrate data from multiple components of Metropolitan's financial and CIP scheduling systems and integrate this data in a new data warehouse. The PCRS will create standardized reports and dashboards and produce forecasts and resource requirement reports. This data warehouse will be an enterprise-wide tool that will also support other future corporate reporting applications. Deployment of the PCRS was authorized by the Board in October 2017.

Real Property Group Business System Replacement

This project will select and implement new software for the Real Property Group (RPG). The software will streamline planning, tracking, execution, and compliance management of Real Property business processes for both the Planning and Acquisition, and Land Management Unit(s). RPG's goal is to centralize the disparate, stand-alone applications and processes, and migrate existing data into one integrated system to increase productivity and improve business processes.

Services Procurement Implementation

In the current Oracle Business Suite (EBS), it is difficult to automate and record certain transactions such as retention payments, Stop Notices, and Liquidated Damages. These transactions are tracked separately by Finance and Engineering. The Oracle on-premise Service Procurement Module is part of the Oracle E-Business Suite. The module automates retention transactions at the time of payment, and can, through customization, accommodate the need to hold other payments as liabilities in the General Ledger (GL).

This project will implement the Oracle Service Procurement Module, as part of the Oracle E-Business Suite, to automate retention or other withholdings required as liabilities in the GL.

Supplier Portal Implementation

This project will implement Oracle's web-based Supplier Portal, which provides self-service capabilities to Metropolitan's supplier community. Suppliers have access to a secure area that provides complete visibility to transactions, including purchase orders, payments and planned payments, offers collaboration with Metropolitan staff, and allows the electronic submission of invoices. The implementation of the portal will reduce repetitive inquiries from vendors, saving staff time and reducing vendor frustration.

WINS Water Billing System Upgrade

The Water Information System (WINS) bills Metropolitan's member agencies, on a monthly basis, for approximately \$75 million. WINS is known as Metropolitan's "cash register". The custom application is 10 years old and needs to be updated. The billing logic is complicated and "hard-coded" into the application, requiring assistance from Metropolitan's Information Technology to make even minor modifications, such as adding new meters or programs. Member agencies have also requested additional functionality. This project will rewrite the WINS to add needed enhancements to the system to add functionality for both Metropolitan and member agencies.

Incident Reporting System

This project delivers a replacement for the 17+ year-old Incident Reporting System. This system reports and tracks incidents that occur on Metropolitan property. Incidents include safety, security, environmental, and workers compensation related events.

Dams and Reservoirs Improvements Program

Fiscal Year 2020/21 Estimate: \$5.1 million

Fiscal Year 2021/22 Estimate: \$13.1 million

Program Information: *The Dams & Reservoirs Improvements Program is comprised of projects to upgrade or refurbish Metropolitan's dams, reservoirs, and appurtenant facilities in order to reliably meet water storage needs and regulatory compliance.*

Accomplishments for FY 2018/19 and FY 2019/20

- New projects initiated during the last biennium:
 - Garvey Reservoir Cover and Liner Replacement
 - Dam Monitoring System Upgrades and Spillway Assessments at Lake Mathews and Lake Skinner

- Major milestones achieved during the last biennium:
 - Construction completed:
 - Palos Verdes Reservoir Improvements
 - Diamond Valley Lake Dam Monitoring Systems Upgrades Stages 1 and 2

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|--|------------------------|----------------------|------------------------------|
| Diamond Valley Lake Dam Monitoring System Upgrades | \$ 6,000,000 | 2022 | Start construction - Stage 3 |
| Jensen FWR # 2 Floating Cover Replacement | \$ 8,400,000 | 2023 | Begin final design |
| Mills Finished Water Reservoir Rehabilitation | \$ 19,000,000 | 2025 | Begin final design |

Dams & Reservoirs - All Project Group

Diamond Valley Lake Dam Monitoring System Upgrades

The three rock-fill dams which form Diamond Valley Lake (DVL) are monitored continuously by the facility's geodetic deformation monitoring system, which transmits real-time displacement data to Metropolitan's Headquarters at Union Station and to the Operations Control Center at Eagle Rock. This data is collected to provide early indication of a potential problem within the dam embankments or foundations, and to prepare mandatory reports on the dams' performance for submission to DSOD. After 17 years of continuous operation, the existing monitoring equipment has deteriorated and needs to be replaced. The planned upgrades will maintain the capability to continuously monitor dam performance in compliance with the DSOD operating permit.

Upgrades to the dam monitoring network at DVL will be accomplished in three stages. The Stage 1- procurement and installation of the weir level sensors and strong motion accelerographs; Stage 2 - design and preparation of procurement documents for the geodetic deformation monitoring system; and Stage 3 - design and procurement of automated data acquisition system and upgrades to the communication network. Stage 2 construction was authorized by the Board in September 2017.

Jensen Finished Water Reservoirs Refurbishment

The Jensen plant has two 50-MG finished water reservoirs. Reservoir No. 1 is a concrete structure with a concrete roof that was completed in 1972. The concrete roof of Reservoir No. 1 has a bituminous built-up roofing system and lightweight concrete cap made of perlite. Portions of the perlite cap have deteriorated over time due to weathering. Any further deterioration may result in ponded rainwater leaking into the reservoir, leading to the reservoir being removed from service in order to maintain treated water quality. The rehabilitation work will replace the damaged perlite with a thin concrete layer, which will extend the cover life for approximately 20 years. Design was authorized by the Board in April 2017.

Reservoir No. 2 has a polypropylene floating cover that was installed in 1997. The floating cover at Reservoir No. 2 is showing significant signs of wear and needs to be replaced. In addition, modifications to the Reservoir No. 2 inlet are needed, as turbulent flow at the inlet has torn holes in the floating cover on several occasions near the corners of the fixed metal air vents. The rehabilitation work will include installation of a new finished water reservoir liner and floating cover with a rainwater removal system and improvement of the existing inlet configuration. Design was authorized by the Board in April 2017.

Within both reservoirs, inadequate mixing contributes to chloramine decay, which in turn increases the nitrite levels within the reservoirs and downstream distribution system. In accordance with the Water Quality Action Response Guidelines, elevated nitrite levels will require additional monitoring, as they may result in bacterial regrowth, and may require operational changes to mitigate chlorine decay. This project will conduct a study of the mixing characteristics of Reservoirs Nos. 1 and 2 and will test and implement solutions for mixing improvements, including installation of stationary mixers equipped with chlorine injection inside the reservoirs to enhance mixing and reduce the occurrence of nitrification within the reservoirs. The project will also install needed mixing improvements.

Dam Monitoring System Upgrades at Lake Mathews and Lake Skinner

Metropolitan relies on extensive instrumentation and regular inspections as a cornerstone of its dam monitoring program. The instrumentation provides warning signs of dam distress and provides real-time monitoring of the embankments and foundations. Extensive monitoring equipment has been installed at Lake Skinner and Lake Mathews over the last 44 years and 79 years, respectively. Recent inspections have noted that several of the piezometers and weirs at these facilities no longer function reliably and require rehabilitation or replacement.

Field surveys and condition assessments will be conducted at both dams to develop a staged replacement schedule. Based on the results of the assessments, installation of automated dam monitoring systems at each dam may be required. Design was authorized by the Board in December 2017.

Etiwanda Reservoir Rehabilitation

The Etiwanda Reservoir has been in operation for 26 years. The liner and appurtenances are in need of refurbishing to maintain their integrity and prevent excessive seepage as noted during periodic inspections. This project will rehabilitate the reservoir by replacing the reservoir liner with a geomembrane liner, replacing the sub-drain sump pump system, and installing new electronic monitoring instrumentation and equipment to better monitor operational status of the sump pump system. The project scope will also include inspection and evaluation of: (1) the asphalt pavement for the reservoir perimeter roads and parking lot for rehabilitation as needed; and (2) the isolation drop gates, emergency discharge slide gate, effluent gate, and reservoir sleeve valves.

Garvey Reservoir Cover and Liner Replacement

Garvey Reservoir was placed into operation in 1954. It is located at the junction of the Middle Feeder and the Garvey-Ascot Cross Feeder in the city of Monterey Park. Garvey Reservoir provides hydraulic grade stabilization, pressure relief, and operational and emergency storage for the Central Pool portion of the distribution system. A flexible membrane liner and reservoir floating cover were installed in 1999. The service life of a reservoir floating cover is approximately 20 years. The existing floating cover at Garvey Reservoir has become increasingly difficult to repair and needs replacement.

This project will replace the reservoir's aging floating cover and flexible membrane liner. In addition, the existing inlet/outlet tower will be retrofitted; circulation piping will be modified; the inlet and outlet control valves will be replaced as required; the standby generator and electrical system will be upgraded, and the on-site water quality laboratory will be relocated and refurbished.

Lake Skinner Outlet Tower Seismic Upgrade

Lake Skinner was constructed in the 1970s and is located in the city of Temecula, in Riverside County. Water is delivered from the lake through its outlet tower to the Skinner Water Treatment Plant. If the lake needed to be drained rapidly in the event of an emergency, the outlet tower would be used to safely release the water. The outlet tower is under the jurisdiction of the California Division of Safety of Dams which requires that the tower meet current seismic codes.

Metropolitan has an ongoing program to evaluate the seismic stability of its facilities in order to maintain reliable water deliveries and to meet current design practices and building codes. Under Metropolitan's seismic assessment program, staff conducted an initial assessment of the Lake Skinner Outlet tower. Seismic analyses of the Lake Skinner Outlet Tower have identified that the tower may be damaged during a major earthquake. The Board authorized preliminary investigations to evaluate the outlet tower to identify potential risk, vulnerabilities, and develop seismic upgrade option in December 2017.

Live Oak Reservoir Rehabilitation

The Live Oak Reservoir has a 2,500-acre-foot capacity and is located in the city of La Verne. The main purpose of the reservoir is to allow peaking of the Devil Canyon Power Plant and to provide for outages. The reservoir water surface controls the upstream hydraulic gradient for the San Dimas Hydroelectric Power Plant. An inspection identified the following: (1) several valves that are leaking; (2) the reservoir liner is damaged in several areas; (2) the emergency backup generator is no longer manufactured and parts are obsolete; (3) the existing HVAC system including the ductwork for the control room has exceeded its expected service life; (4) improvements to provide access control, intrusion alarm, and surveillance are needed; and (5) improvements to the grading, surface drainage, and paved roads adjacent to the Live Oak Reservoir are also needed. This project will replace three leaking butterfly valves, spot repair the existing asphalt concrete (AC) liner, replace the existing Emergency Standby Generator, replace the existing Heating, Ventilation, and Air Conditioning (HVAC) system, improve erosion controls for the facility, identify and restore all electrical components to new condition, including electrical, panel boards and grounding, sump pumps, and associated instrumentation, and conduct a security assessment of the facility to reinforce or upgrade physical features and protect infrastructure. This includes replacement of the inner fencing for the reservoir with security type fencing.

This project will also improve the emergency dewatering system for Live Oak Reservoir. The project scope will include the design and construction of appurtenant structures such as gantry cranes for lifting spillway drop gates, an emergency generator to back up the crane power source, automation of valves, modification of blow-off structures, or addition of secondary discharge lines to provide a more direct, reliable, and efficient means to dewater Live Oak Reservoir in the event of an emergency.

Mills Finished Water Reservoir Rehabilitation

The Mills plant relies on two finished water reservoirs with floating covers and geomembrane liners to provide storage for the downstream distribution system. Their capacity is approximately 25 million gallons (MG) each. The Hypalon cover on Reservoir No. 1 was installed in 1997, while the polypropylene cover on Reservoir No. 2 was installed in 1996. Over the past three years, an increasing number of rips and pinhole leaks in the covers were discovered and repaired. Due to their deterioration, the floating covers and geomembrane liners at both reservoirs need to be replaced. The rehabilitation work will include installation of new finished water reservoir liners and floating covers with a rain removal system, refurbishment or replacement of existing reservoir gates, installation of a new drop gate, and installation of enhanced security features and appurtenances for both reservoirs. Design was authorized by the Board in April 2017.

Palos Verdes Reservoir Cover Replacement

Palos Verdes Reservoir was constructed in 1939 to provide operational storage and hydraulic flexibility within the distribution system. Metropolitan installed a geomembrane floating cover in 1988 to preserve water quality and reduce evaporative losses from the reservoir. Following a detailed inspection of that facility in 2011, the reservoir was removed from service because of damage to its floating cover. Due to its age and deteriorated condition, the synthetic rubber could not be repaired. The scope of the project includes removal of the reservoir's existing concrete lining; regrading of the clay sub-liner; modification of the existing spillway structure, inlet/outlet tower, and secondary inlet and outlet structures; installation of a new sub-drain system, asphalt concrete lining, geomembrane liner, and geomembrane floating cover; modification of the existing 480-volt electrical service, sodium hypochlorite feed system, rainwater removal system, and drainage piping; installation of a new valve and flowmeter upstream of the reservoir; addition of a precast concrete instrumentation and water quality structure. Construction was authorized by the Board in November 2015.

Palos Verdes Reservoir Groundwater Management

This project will address long-term groundwater management at the Palos Verdes Reservoir. The project will evaluate monitoring and disposal options for groundwater seepage, install monitoring instrumentation, develop groundwater and stormwater handling systems, if needed, and provide a connection to the sewer.

Spillway Upgrades - Lake Mathews and Lake Skinner

Following the recent incidents at Oroville Dam, the California Division of Safety of Dams (DSOD) is now requiring that dam owners in California assess the condition of dam spillways to confirm that they meet minimum safety standards. In July 2017, DSOD issued an initial list of 93 dams requiring comprehensive spillway assessments to evaluate hydraulic capacity, geotechnical stability, structural integrity, and potential erosion from dam releases. Of the 20 Metropolitan facilities that are permitted by DSOD, two have been directed to undergo the comprehensive assessments: Lake Mathews and Lake Skinner.

Metropolitan submitted the required work plans for re-evaluation of the spillways at Lake Mathews and Lake Skinner and received approval of those plans in September 2017. For each dam, a comprehensive spillway assessment report will be prepared and submitted to DSOD for review. As part of these comprehensive assessments, re-evaluation of the outlet tower and conduit at Lake Skinner is recommended to identify potential risks and vulnerabilities of lowering the reservoir pool after a major seismic event. Due to its integral role in withdrawing water from the reservoir, the spillway work plan will be expanded to include the Lake Skinner outlet tower and conduit. The assessments were authorized by the Board in December 2017.

Weymouth Finished Water Reservoir Rehabilitation

The Weymouth plant's 50-million-gallon finished water reservoir was built in 1964. Because the finished water reservoir's concrete roof was constructed with no expansion joints, numerous cracks in the roof slab continue to open and close with the expansion/contraction cycles caused by daily fluctuation in temperature. Repair is required to protect the concrete and to prevent corrosion of the exposed reinforcing steel.

This project will repair cracked and spalling concrete on the underside of the finished water reservoir roof slab, support beam connections, and entry staircase. The project will concurrently perform any needed seismic retrofit to meet the latest Division of Safety of Dams (DSOD) standards.

Distribution System Reliability Program

Fiscal Year 2020/21 Estimate: \$37.2 million

Fiscal Year 2021/22 Estimate: \$29.9 million

Program Information: *The Distribution System Reliability Program is comprised of projects to replace or refurbish existing facilities within Metropolitan's distribution system, including reservoirs, pressure control structures, hydroelectric power plants, and pipelines, in order to reliably meet water demands.*

Accomplishments for FY 2018/19 and FY 2019/20

- New projects initiated during the last biennium:
 - East Lake Skinner Bypass and Bypass No. 2 Screening Structure Upgrade
 - Electrical Upgrades at Structures in the Orange County Region (Stage 2)
 - Flow Meter Replacement
 - Foothill Feeder - Castaic Valley Blow-off Valves Replacement
 - Hollywood Tunnel North Portal Equipment Upgrades
 - Lake Mathews Above Ground Storage Tank Replacement
 - San Diego Pipeline No. 1 Joint Repair
 - San Jacinto Diversion Structure Slide Gate (V-03) Rehabilitation
 - Santa Monica Feeder Cast Iron Pipe Rehabilitation
 - Sepulveda Feeder/East Valley Feeder Interconnection Electrical Upgrades
 - Sepulveda-West Basin Interconnection Valve Replacement
 - Service Connection LA-17 Rehabilitation
 - Service Connections WB-2A & WB-2B Equipment Relocation
 - Wadsworth Pumping Plant Sleeve Valve Refurbishment
- Major milestones achieved during the last biennium:
 - Construction completed:
 - Orange County Feeder Relining Reach 2
 - Santa Ana Bridge Expansion Joint Replacement
 - Garvey Reservoir Erosion & Drainage Control Improvements - Zones 1 - 5
 - Fairplex and Walnut Pressure Control Valves Replacement
 - Wadsworth Pumping Plant Yard Piping Lining Repairs
 - Lake Mathews Forebay Outlet Tower Improvements
 - Foothill Feeder - Castaic Valley Blow-off Valves Replacement
 - Valley View Hydroelectric Plant Generator Refurbishment
 - Rialto Pipeline Service Connections CB-12 & CB-16 Valve Replacement
 - DVL Inlet/Outlet Tower Fish Screen Replacement
 - San Diego Pipeline No. 1 Joint Repair

- Five projects completed design:
 - Orange County Feeder Blow-off Structure and Access Road Repair
 - East Orange County Feeder No. 2 Service Connection A-6 Rehabilitation
 - Casa Loma Siphon Barrel No. 1 - Pipe Procurement for Siphon Replacement
 - Electrical Upgrades at 15 Structures in Orange County Region
 - Orange County Feeder Cathodic Protection

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|---|------------------------|----------------------|--|
| Casa Loma Siphon Barrel No. 1 - Replacement | \$ 36,000,000 | 2023 | Complete design and begin construction |
| East Orange County Feeder No. 2 Service Connection A-6 Rehabilitation | \$ 2,100,000 | 2021 | Complete construction |
| Electrical Upgrades at 15 Structures in Orange County Region | \$ 4,700,000 | 2021 | Complete construction |
| Garvey Reservoir Drainage & Erosion Control Improvements - Zones 6 to 8 | \$ 1,800,000 | 2020 | Complete design |
| Garvey Reservoir Sodium Hypochlorite Feed System Upgrades | \$ 3,900,000 | 2022 | Complete construction |
| Lake Mathews Forebay Pressure Control Structure and Bypass | \$ 64,000,000 | 2027 | Begin design |
| Orange County C&D Team Support Facility | \$ 14,000,000 | 2020 | Complete construction |
| Orange County Feeder Lining Repair - Reach 3 | \$ 14,000,000 | 2023 | Begin construction |
| West Valley Feeder No. 1 - Access Road and Valve Structure Improvements | \$ 5,000,000 | 2020 | Complete construction of DeSoto valve structure improvements |

PCSs/HEPs/Service Connections/Valves & Gates Project Group

108th Street Pressure Control Structure Valve Replacement

The 108th Street Pressure Control Structure (PCS) located on the Palos Verdes Feeder was constructed in 1941. The pipeline has a design capacity of 80 CFS in this area and provides the flexibility to deliver water through the Inglewood Lateral and Culver City Feeders to member agencies, including the city of Los Angeles, Central Basin Municipal Water District, and West Basin Municipal Water District. This project will replace two failing valves at the 108th Street PCS. The work will include replacing a corroded ladder, catwalk grating, restoring electrical components to new condition, and adding security features. Electrical components consist of electrical panel boards and grounding, sump pumps, and associated instrumentation.

Appian Way Valve Replacement

The Appian Way Sectionalizing Valve Structure on the Palos Verdes Feeder was constructed in 1937. The pipeline has a design capacity of 60 CFS in this area and delivers water to Metropolitan's member agencies, Central Basin Municipal Water District, and the city of Los Angeles. The sectionalizing valve provides Metropolitan the flexibility to isolate flows on the Palos Verdes Feeder between the Long Beach Lateral Turnout Structure and Appian Way Sectionalizing Valve Structure to perform preventive maintenance, planned shutdowns, and emergency activities if required. This operational reliability allows for continued delivery of water to Metropolitan's central pool. The failing sectionalizing valve is 80 years old. Over the past few years, the 24-inch valve has been rebuilt several times to extend its service life. This valve can no longer be rebuilt and has become extremely difficult to operate as it gets stuck and does not fully open or close. The body and cone have eroded, which prevents the valve from properly sealing. This project will replace two failing valves, dresser couplings, corroded pipe spools, and install a new precast concrete roof slab at the Appian Way Sectionalizing Valve Structure. Additionally, the project would identify and restore all electrical components, and provide for SCADA control of the valve. Electrical components include electrical panel boards and grounding system, sump pumps, and associated instrumentation.

Conveyance and Distribution System Electrical Structures Rehabilitation

Metropolitan's distribution system includes over 1,000 structures which house equipment used to measure pipeline flow, control pipeline flow and/or pressure, relieve pressure or vacuum, and isolate or sectionalize a pipeline. The conduits and electrical equipment inside the structures have corroded and no longer provide adequate grounding. In addition, the wiring inside the conduits may be compromised. These electrical components have been in continuous service in a damp, underground environment for over 50 years, and need to be upgraded. The rehabilitation for the Conveyance and Distribution System Electrical Structures has been prioritized and will be completed in five stages. The Stage 1 upgrades will upgrade 15 highest priority service connection structures within Orange County. Stage 2 improvements will upgrade remaining 244 structures within Orange County. Stage 3 improvements will upgrade 258 structures in northern Los Angeles County. Stage 4 improvements will upgrade 258 structures in southern Los Angeles County. Stage 5 improvements will upgrade 301 structures in Riverside, San Diego, and San Bernardino Counties. The precise number of structures to be improved may vary depending condition assessments. The planned work includes replacing the existing service panels, conduits, wiring lights, and receptacles; and providing new grounding systems, sump pumps, exhaust fans, and remotely monitored flood alarms at each structure.

Coyote Creek Hydroelectric Plant/PCS Emergency Standby Generator Replacement

The existing emergency stand-by generator was installed when the Hydroelectric Plant/Pressure Control Structure (HEP/PCS) was constructed in 1982. The emergency generator is 37 years old and has deteriorated with age. This project will replace the existing emergency generator with a new 150 kW, 3-phase 480-volt, diesel engine driven generator and construct an additional manual transfer switch outside the stationary generator room to provide for a secondary portable generator hookup. The project scope will include electrical and mechanical system upgrades to the generator building to meet current emission and fire code regulations under the Environmental Protection Agency's Tier 3 Emission and Fuel Standards Program.

Eagle Rock Tower Distribution System Upgrades

Eagle Rock Tower diverts the flow of water from the Weymouth plant into the Palos Verdes Feeder, Santa Monica Feeder, and the Eagle Rock Lateral. The tower is also used to maintain the required hydraulic grade to the service connections upstream of the tower. This project will perform needed rehabilitation of various components of the Eagle Rock Tower distribution system. The project will include the following: (1) replace the leaking control and isolation valves at the interconnections to the Palos Verdes and Santa Monica Feeders, (2) replace corroded slide gate and cover, and repair slide gate rails and associated components, (3) fabricate and install new drop gate at inlet side of Eagle Rock Tower to improve isolation capability, (4) extend Santa Monica Feeder interconnection blow-off structure and install isolation valves to improve maintenance flexibility, (5) install stairs from access road to facilitate safe access to blow-off structure, and (6) replace corroded work platforms and ladders in interconnection structures to improve worker safety.

East Orange County Feeder No. 2 Service Connection A-6 Rehabilitation

The A-06 Valve and Meter structure is a service connection for the City of Anaheim and is located on the East Orange County Feeder #2. The meter is a 24-inch venturi meter with a design capacity of 40 CFS. The meter was first put into service in August of 1964. During routine maintenance, staff noticed a leak from a weld-o-let near the bottom of the venturi meter. The Materials and Metallurgy Team inspected the meter in June 2014 and recommend replacement the venturi meter. The scope of work is to replace the A-06 Venturi meter, valve, steel grating, and adjacent piping that is deteriorated. The work will also include replacing the sump pump and identifying and restoring all electrical components to like new condition. A construction contract was awarded by the Board in October 2019.

East Orange County Feeder No. 2 Service Connection OC-44A Valve Replacement

The East Orange County Feeder #2 is a 25-mile-long pipeline which delivers treated water from the Diemer plant to the cities of Anaheim, Orange, Santa Ana, and Irvine. Service Connection OC-44A, which is located in Newport Beach, was constructed in 1967 and delivers water to the Municipal Water District of Orange County. Gradual corrosion and wear from over 50 years of operation has led to the deterioration of the 16-inch plug valve. The valve is currently leaking and needs to be replaced. The plug valve shaft was installed in the horizontal position to allow placement of the valve within the vault. This unconventional position may have accelerated the deterioration of the valve. This project will replace a 16-inch-diameter plug valve, flowmeter, and appurtenant piping as required in the Service Connection OC-44A Structure. The work will also identify and restore all electrical components to new condition. Electrical components consist of electrical panel boards and grounding system, sump pump, and associated instrumentation.

Flow Meter Replacement Project

Metropolitan has over 500 flowmeters used for water revenue metering at service connections, operation of the conveyance and distributions, and for process control. Many flowmeters have been in operation over 50 years. Some of these meters are exhibiting signs of deterioration. Spare parts for older meters are increasingly difficult to procure.

This project will be conducted in three stages. Under Stage 1, a comprehensive evaluation of the flowmeters will be conducted to assess their current condition and availability of spare parts. Under Stage 2, deteriorating meters in critical services will be replaced. Under Stage 3, a comprehensive, risk-based approach will be implemented to replace the remaining flow meters. Under the General Managers authority, preliminary investigations were authorized in March 2019.

Foothill Feeder PCS Valve Replacement

Foothill Pressure Control Facility (PCF) is located at Castaic Lake Dam in northern Los Angeles County. The structure takes untreated water from the west branch of the State Water Project system and controls all untreated water flows into the Jensen plant. Foothill PCS consists of two turbines, two 60-inch inline sleeve valves, and three parallel trains of conical plug valves. Each plug valve train consists of three 48-inch conical plug valves in series, that are throttled to dissipate pressure. Although the conical plug valves are currently used to control flow, these types of valves are not well-suited for this application. In addition, recent valve inspections have identified leaks, cracks, and corrosion. This project will replace the conical valves with valves that are better-suited for flow control and will replace all other valves that are at the end of their service life and other facility improvements.

Foothill Hydroelectric Plant Refurbishment

The Foothill Hydroelectric Plant was constructed in 1981. The electrical and mechanical systems are exhibiting signs of normal wear and tear after 30 years of service. The scope of work is to refurbish control and electrical protection systems, mechanical piping for the generator cooling water systems, and add a Programmable Logic Controller. This project will install an on-line data acquisition and monitoring instrumentation and refurbish or replace other deficient equipment. Design was authorized by the Board in September 2018.

An assessment has identified that the facility is seismically vulnerable and should be upgraded. The scope of work also includes reinforcing the roof, replacing a cracked beam, and installing connectors and seismic restraints to the roof, columns, and walls. Retrofit work will also include upgrades for non-structural components such as equipment anchors, pipe/conduit supports, and crane rail bracing. Design was authorized by the Board in December 2014.

In addition, the electrical and mechanical systems are exhibiting signs of normal wear and tear after 30 years of service. The scope of work is to refurbish electrical protection relays, control relays, mechanical piping for the generator cooling water systems, and add a Programmable Logic Controller. This project will install on-line data acquisition and monitoring and will refurbish or replace other deficient equipment. Design was authorized by the Board in March 2012.

Hollywood Tunnel North Portal Equipment Upgrades

Built as part of the Santa Monica Feeder in 1937, the North Portal of the Hollywood Tunnel is one of three control points along the feeder, which delivers water to the cities of Burbank, Beverly Hills, Los Angeles, and Santa Monica. The valves and mechanical control system at the North Portal of the Hollywood Tunnel are obsolete. Repair parts are not available and must be fabricated at a machine shop. This project will replace the existing sleeve valves and hydraulic actuators at the North Portal of the Hollywood Tunnel with new control valves with electric actuators. The upgrade includes replacing the mechanical controls with electronic, PLC/SCADA controls, which will allow the facility to be monitored and controlled from the Eagle Rock Operations Control Center.

Hydroelectric Plant Rehabilitation

Metropolitan owns and operates 15 hydroelectric power plants with a total installed capacity of 130 megawatts. Approximately 10% of Metropolitan's income is derived from these power plants. The first plant to be commissioned was the Greg Avenue Power Plant in 1979, and the last was the Wadsworth Hydroelectric Power Plant in 2002. Many of these plants have been in operation over 35 years and have not undergone refurbishment or upgrade. Several plants are beginning to show signs of deterioration and several have already been refurbished. A comprehensive approach to rehabilitation of the other hydroelectric plants is needed to protect Metropolitan assets and fortify infrastructure reliability.

This project will assess and evaluate Metropolitan's hydroelectric plants, determine the rehabilitation requirements for each plant, identify needed pilot efforts, prioritize the needed rehabilitation, and develop a multi-phase plan to complete the rehabilitation. New facilities or those that have already undergone rehabilitation will not be included in the evaluation. For the included hydroelectric plants, the assessment will evaluate the following equipment and systems: turbine, generator, power equipment and switchyard, control system, protection system, auxiliary systems such as lube oil and cooling water, and the overall facility.

Lake Mathews Forebay Pressure Control Structure and Bypass

Lake Mathews is the terminus of Metropolitan's CRA and was constructed in the 1930's. Untreated water stored in the reservoir is withdrawn through the lake's forebay and hydroelectric plant and is then conveyed through the Upper Feeder and Lower Feeder to the Weymouth and Diemer plants, respectively. The Lake Mathews forebay discharge valves and outlet tower have gradually deteriorated over 75 years of operation. Portions of the facilities need to be replaced to maintain reliable deliveries from Lake Mathews into the Central Pool. The ten 32-inch-diameter Howell-Bunger valves that are used to withdraw water from the lake have gradually deteriorated through continuous use. The frequency of repairs is increasing, while replacement parts are difficult to obtain. These 60- to 75-year-old valves need to be replaced.

Upgraded facilities may include a bypass system which includes new headworks regulating valves, upgraded outlet tower gates, and a new overflow spillway structure. The system is expected to provide full-service capacity and deliver water to the Upper and Lower Feeders year-round. The Board authorized preliminary design in February 2014.

Lake Mathews Junction Shaft Gate Hydraulic Power Unit Study - Outlet Tower No. 2 Isolation

The roller gates at the Lake Mathews junction shaft do not operate consistently and reliably. The large isolation gates utilize hydraulic power units to operate under normal conditions and store energy for use in emergency conditions when electric power is not available. Although maintained in accordance with the manufacturer's recommendations, the gates no longer function as designed. This project will evaluate the two roller gate operators at the Lake Mathews junction structure that provide isolation for Outlet Tower No. 2. The study will focus on the condition of hydraulic power unit equipment, safety elements related to pressurized hydraulic reservoirs/tanks, and operating procedures/practices.

Lake Mathews Outlet Tower No. 2 Valve Rehabilitation

The outlet tower valves operate intermittently do not open and close completely. Without proper operation of the valves, tier selection and flow rates are impacted which may adversely affect system operations including raw water quality, water treatment processes at the downstream Weymouth and Diemer plants, and secure isolation of the tower from the lake needed for maintenance and inspection work. This project will complete a comprehensive study and implement recommendations on replacement or refurbishment of the butterfly valves on the Lake Mathews Outlet Tower No. 2.

OC-88 Pumping Plant Upgrades

The OC-88 Pumping Plant, consisting of the OC-88 and OC-88A pump stations, was constructed in 1990 and is located in the city of Lake Forest. Treated water from the Diemer plant is conveyed through the Allen McColloch Pipeline (AMP) to the OC-88 Pumping Plant, which in turn pumps water directly into the Municipal Water District of Orange County's (MWDOC's) South County Pipeline. The surge tank system protects the AMP and the South County Pipeline from pressure surges. Two new surge tanks were added when the OC-88 Pumping Plant modifications were completed in 2005. However, the air compressor was not upgraded at that time. A recently completed high-flow test at the OC-88 Pumping Plant identified that a second air compressor should be installed to adequately protect the AMP and the South County Pipeline. This project will upgrade the OC-88 Pumping Plant's surge tank system, install a second air compressor, replace flow meters and pumps, perform overhead crane improvements, upgrade the surge tank, fire protection, and HVAC systems; and perform other associated facility improvements. Preliminary design was authorized by the Board in August 2013.

The OC-88 and OC-88A pump stations feed directly off the Allen-McColloch Pipeline (AMP) and deliver water into the South County Pipeline to supply the Santa Margarita Water District, a member agency of the Municipal Water District of Orange County. Southern California Edison performed an efficiency test on the three existing pump motors located at the OC-88A pump station and found that improvements in motor efficiency could result in annual savings of approximately \$25,000 in electricity costs, and an estimated 235 tons of CO2 emissions. This project will also replace the three pumps at the OC-88A pump station with pumps that have high-efficiency motors equipped with variable frequency drives.

Olinda Pressure Control Structure Valve Replacement

The Olinda Pressure Control Structure was constructed in 1969 to provide regulation of flows in the Lower Feeder between the Santiago Control Tower and Diemer Filtration Plant. This project will replace two conical plug valves to increase efficiency, reliability, and mitigate the vibrations caused by operating the valves. The structure's electrical components will also be evaluated and refurbished or replaced. Replacing the existing 49-year-old valves will improve operational control of the Lower Feeder between the Santiago Control Tower and the Diemer plant. If cost effective, relocation of the PCS will also be considered.

Orange and Riverside/San Diego County Operating Regions Valve Replacement

Metropolitan's distribution system includes over 830 miles of pipelines and 5,400 individual structures that require regular maintenance and monitoring. The system is comprised of four regions: the Los Angeles County, Orange County, Riverside/San Diego County, and Western San Bernardino County regions. The subject project will replace valves within the Orange and Riverside/San Diego County operating regions. Replacement of these valves is a priority due to the age of the feeders and the number of critical valves that need to be replaced.

The valves on the Second Lower Feeder, Orange County Feeder, East Orange County Feeder, Lower Feeder, Santiago Lateral, and the Allen-McColloch Pipeline have been in service up to 50 years and have reached the end of their useful and expected service life. Failure of these valves or their associated components may result in an unplanned emergency shutdown of one of these pipelines impacting delivery to our member agencies. The scope of work is to replace approximately 70 deteriorated valves ranging in size from 1 to 12 inches in diameter on various pipelines in the Orange County Distribution System. Construction was authorized by the Board in September 2017.

The Riverside/San Diego County operating region serves Eastern Municipal Water District, Western Municipal Water District of Riverside County, and the San Diego County Water Authority. In this region, the valves to be replaced are located on the Lake Skinner Outlet Conduit and San Diego Pipelines Nos. 3, 4 and 5. These lines commenced operation between 1959 and 1972. The valves to be replaced include air release/vacuum valves that are installed at high points in the lines to exhaust or admit air during pipeline filling or dewatering operations, and small globe, plug, and butterfly valves. The latter valves are used for isolation of air release/vacuum valve assemblies, blow-off structures, and pressure control structures. Closing these isolation valves allows inspection and maintenance activities to proceed without requiring a shutdown of the feeder. The Board authorized design and procurement in April 2018.

Palos Verdes Feeder - Long Beach Lateral Turnout Structure Sta. 1442+15 Valve Replacements

The Palos Verdes Feeder - Long Beach Lateral turnout structure, located in the County of Los Angeles, was constructed in 1938. The Long Beach Lateral turnout structure consists of seven valves that allows Metropolitan to continue delivering water upstream and downstream to member agencies during preventive maintenance, shutdowns, and emergencies. This project will replace the seven valves on the Palos Verdes Feeder/Long Beach Lateral Turnout Structure that are 80 years old. The structure will also be refurbished and include replacing the existing catwalk grating, a new precast concrete roof slab, lifting mechanism, security type entry hatches, and identify and restore all electrical components to like new condition. Electrical components consist of electrical panel boards and grounding system, sump pump and associated instrumentation.

Rio Hondo Pressure Control Structure Valve Replacements

The Rio Hondo Pressure Control Structure (PCS) on the Middle Feeder pipeline was constructed in 1983. Construction of the Rio Hondo PCS incorporated an existing valve structure, so the valves at this location have been in operation since 1953 as part of the original underground valve structure. The existing valves have been in continuous service for approximately 65 years, and over time have required frequent repairs/rebuilding.

The Eagle Rock Operations Control Center utilizes the Rio Hondo PCS to maintain the lower pressure zone on the southern half of the Middle Feeder, and to assure deliveries to member agency water demands in the southwestern service area. This project will replace failing valves at the Rio Hondo PCS. The work will include replacing dresser couplings, pipe spools, and pipe supports; providing adequate ventilation for the structure; rehabilitating the existing wastewater system; and identifying and restoring all electrical components to new condition. Electrical components consist of electrical panel boards and grounding system, sump pumps, and associated instrumentation.

San Diego Canal Radial Gates Rehabilitation (V-06 & V-08)

The protective coatings on the radial gate at the San Diego Canal and the operating components of the gates have begun to fail, and significant metal loss has occurred. In addition, the performance of the existing motor actuators used to open and close the gates has diminished. Should this gate fail, there would be loss of control to regulate flow into Lake Skinner from the San Diego Canal, along with loss of control in surface elevation that regulates flows through the Lake Skinner Bypass screening structures. The bypass structures supply the Skinner area raw water pipelines and the Skinner plant when Lake Skinner is being bypassed, typically due to a taste and odor issue in the lake. This project will rehabilitate or replace the San Diego Canal Radial Gates V-06 and V-08. The rehabilitation may include strengthening or replacing steel members as needed, replacing the radial gate actuator and controls, and preparing and coating steel surfaces with an approved coating, such as a galvanic metalized coating.

San Diego Pipelines 3 & 5 Vacuum Valve Replacement

This project will remove and replace 72 existing vacuum valves on San Diego Pipeline No. 3 (SDPL3) and San Diego Pipeline No. 5 (SDPL5). The existing valves on SDPL3 have been in service for almost 60 years, while those on SDPL5 have been in use for almost 40 years. All the valves have reached the end of their services lives, and the majority are not in a condition to be rehabilitated. All valves will be replaced in-kind. This project will lower corrective maintenance costs, and the risks of valve failures resulting in property or pipeline damage or unscheduled pipeline outages.

San Dimas and Red Mountain Power Plants Standby Diesel/Engine Generator Replacements

The emergency generator at Red Mountain Hydroelectric plant was installed during the original plant construction in 1983. The generator at the San Dimas Hydro Electric Power Plant was installed during original Pressure Control Structure construction in 1975. These generators are necessary to ensure all operating equipment performs the required flow transfers between the Hydroelectric Power Plant (HEP) and the Pressure Control Structure (PCS) during un-scheduled HEP interruptions and SDGE station-power failures. The scope of work is to design, procure, and construct two standby diesel engine generators, one each at the San Dimas and Red Mountain Power Plants. The project scope includes removal of the existing generators and fuel tanks, construction of a new unloading facility with spill containment, steel overhead canopies, and electrical and mechanical system upgrades to the replacement generator to meet current emission and fire code. Design was authorized by the Board in February 2016.

San Dimas Hydroelectric Plant Rehabilitation

The San Dimas Hydroelectric Plant was constructed in 1981, and the electrical and mechanical systems are exhibiting signs of normal wear and tear after 30 years of service. The scope of work is to rehabilitate the turbine, generator, and switchgear and to provide associated controls, seismic and other facility upgrades. Design was authorized by the Board in March 2013.

San Jacinto Diversion Structure Slide Gates Rehabilitation

The San Jacinto Diversion Structure, located at the base of the San Jacinto Mountains, was completed in 1939. The diversion structure divides incoming flow from the CRA to three different outlets, using slide gates to control each flow. Although the existing gates were originally designed for open/close operation only, they had historically also been used for throttling the flow, which had caused substantial damage to the gates. This project will replace the existing V-01 and V-02 cast iron slide gates and appurtenances at the San Jacinto Diversion Structure with a single stainless-steel slide gate designed for throttling. This project will increase the operational reliability of the structure and the connection to the Casa Loma Siphon No. 1 and CRA.

The V-03 gate was designed to shut off flow to the San Jacinto pipeline. The slide gate does not fully close to provide isolation when needed or provide flow regulation. This project will replace or rehabilitate and modify the existing V-03 cast iron slide gate and its appurtenances at the diversion structure. Under the General Manager's authority, design, procurement was authorized in February 2019.

Santa Monica Feeder and Calabasas Feeder Bypass for Sectionalizing Valves

The lack of a bypass line at the Santa Monica Feeder and Calabasas Feeder creates the potential for damage to the valves and their operators due to the inability to equalize pressure across the valves before operating. Further operation of these valves, without installing a bypass, will continue to place the valves and pipeline at risk for damage and potentially emergency or unplanned shutdown. This project will design, fabricate, and install bypass lines at three sectionalizing valve locations that currently do not have a bypass line.

Santiago Lateral Station 216+40 Butterfly Valve Replacement

The Santiago Lateral is a pre-cast concrete pipeline, ranging in size from 60-inch to 72-inch, and was constructed in 1955. It extends southerly from the Santiago Control Tower in the Anaheim Hills approximately 7.4 miles to Irvine Lake. The pre-cast concrete pipeline provides raw CRA water to Anaheim, IRWD and Irvine Lake. The 42-inch sectionalizing valve currently leaks resulting in unwanted flows to the south portion of the Santiago Lateral. This project will replace the valve and construct a bypass line to handle lower flow rates. The Board authorized preliminary design in August 2013.

Sepulveda Canyon Control Facility Electrical and Mechanical Rehabilitation & Seismic Upgrades

The Sepulveda Canyon Facility consists of a pressure control structure, hydroelectric plant, and two water storage tanks. The pressure control structure was constructed in the early 1970s to reduce pressure in the 9-foot-diameter Sepulveda Feeder as it conveys treated water from the Jensen Plant. The two water tanks have a combined capacity of 18 million gallons of water and are used to regulate flows through the pipeline. The hydroelectric plant, which was constructed in 1982, takes advantage of excess pressure in the Sepulveda Feeder to generate up to 8.6 megawatts of electricity with its single turbine. The facility is located on top of a large pad that was constructed by filling a steeply sloped V-shaped ravine. The pad is approximately 120 feet above the toe of the slope. The site is located within one mile of the Santa Monica Fault, which is capable of generating a 6.8 magnitude earthquake. Preliminary slope analyses indicate that the fill could slide down the slope during a major earthquake, causing significant damage to the pressure control structure, the water tanks, and the hydroelectric plant. This project will consolidate all seismic upgrade efforts for the entire Sepulveda Canyon Control Facility and seismically upgrade the facility. Design was authorized by the Board in March 2013.

The Sepulveda Canyon Hydroelectric Plant was constructed in 1982, and the electrical and mechanical systems are exhibiting signs of normal wear and tear after 30 years of service. The scope of work is to rehabilitate the electrical and mechanical components including the turbine/generator and upgrades to the protection and control systems. The project also includes rehabilitation and structural improvements to the switchyard. Design was authorized by the Board in March 2013.

Sepulveda Feeder/East Valley Feeder Interconnection Electrical Upgrades

The East Valley valve structure is located on the north sidewalk of the Rinaldi Street and Hayvenhurst Avenue intersection in Granada Hills. During the wet season, this structure receives intrusive storm water leakage causing the junction boxes, electrical enclosures, and conduits to corrode and short circuit. The extent of damage has accelerated, and storm water now enters the structure. This project will install new wiring and control panels for operation of the existing valve, remove the existing aboveground disconnect switch and install a new power distribution panel, install new duct banks and conduits to supply power to each of the critical structures, install additional bollards around the distribution panel to minimize damage from vehicles, repair damaged sidewalk, and assess potentially relocating the existing metering structures. Design was authorized by the Board in October 2018.

Sepulveda-West Basin Interconnection Valve Replacements

The Sepulveda-West Basin Interconnection was constructed in 1970. The interconnection allows Metropolitan's Sepulveda Feeder pipeline the flexibility to convey supplemental flow to the West Basin Feeder. The structure includes two 16-inch lines with sleeve valves and one 12-inch line with a globe valve. Each line may be isolated at the either end with plug valves. This project will replace three failing valves at the Sepulveda-West Basin Interconnection structure. The work will include replacing associated dresser couplings, pipe spools, and pipe supports. Additionally, work on the structure will include installing a new precast concrete roof slab, providing adequate ventilation for the structure, replacing a sump pump, structure modifications to address algae accumulation on adjacent sidewalk due to frequent water discharge from the sump pump, and identifying and restoring all electrical components to new condition. Electrical components will consist of electrical panel boards and grounding, sump pumps, and associated instrumentation. Design was authorized by the Board in October 2018.

Service Connection LA-17 Rehabilitation

Service Connection LA-17 is located in the city of Los Angeles at the terminus of the Eagle Rock Lateral. It includes three lines: (1) 17A is a 24-inch line with a capacity of 30 cfs, (2) 17B is a 48-inch line with a capacity of 100 cfs, and (3) 17C is an 85-inch line with a capacity of 310 cfs. Three venturi tubes at the LA-17 service connection have been in service for more than 60 years and require significant rehabilitation or replacement.

Significant coating deterioration and metal loss with extensive pitting and corrosion were identified on the bottom side of the 48-inch venturi tube. The wall thickness of this venturi tube is approximately 30% of its original thickness. Failure to replace this venturi tube will lead to eventual leakage, flooding the structure, and impacting water deliveries to the member agency. This project will replace the deteriorating LA-17B welded steel venturi tube located at the Service Connection LA-17 structure. The work will also recoat the LA-17A and LA-17C venturi tubes within this structure. Additionally, work will include replacing the sump pump and identifying and restoring all electrical components to new condition. Electrical components will consist of electrical panel boards and grounding, and associated instrumentation. Under the General Manager's authority, design was authorized in June 2019.

Upper Newport Bay Blow-off Structure Rehabilitation

The existing blow-off structure on the Orange County Feeder enables the pipeline to be dewatered in the event of an emergency and provides access for routine maintenance and inspection. Following 73 years of continuous operation in a moist environment near Upper Newport Bay, the blow-off valves and piping inside the structure have corroded and need to be replaced. In addition, due to ongoing erosion, the only road available to access the blow-off structure has been damaged and requires repairs. This project will restore access to the structure and replace its internal valves and piping. The planned repairs include regrading of the existing access road and reinforcement of crossings where the road intersects drainage channels; strengthening of the existing turn-around area adjacent to the blow-off structure, which will allow maintenance vehicles to set up for repair activities; installation of new valves and replacement of corroded piping; and modification of piping to ensure continued compliance with current California Division of Drinking Water regulations to prevent potential cross connections. In June 2019, the Board authorized entering into two agreements for the performance of mitigation to support rehabilitation this blow-off structure.

Venice Hydroelectric Plant Rehabilitation

The Venice Hydroelectric Plant (HEP) was constructed in 1982, and the electrical and mechanical systems are exhibiting signs of normal wear and tear after 30 years of service. The scope of work is to rehabilitate the electrical and mechanical components including the turbine generator and the protection and control systems. The project also includes rehabilitation and structural improvements to the switchyard. Design was authorized by the Board in March 2013.

Venice PCS Valve and Security Upgrades

Venice Pressure Control Structure (PCS) is the second of two pressure control structures located along the Sepulveda Feeder. Venice PCS performs the critical operational functions of reducing grade and controlling flows in the Sepulveda Feeder. The PCS consists of multiple control valves and associated piping. The valves are almost 47 years old and have been experiencing increased failures over the last 10 years. This project will refurbish several valves and will install multi-hazard security features for facility infrastructure protection.

Wadsworth Pumping Plant Sleeve Valve Refurbishment

Recent inspections have identified numerous deteriorated sleeve valves at the Wadsworth Pumping Plant. The sleeve valves originally installed in 1999 control the flow of water from DVL to the San Diego Canal. While operation of the pumping plant has not yet been impacted, failure of the valves could lead to an unplanned shutdown and interruption of water delivery to member agencies. This project will refurbish seven 66-inch by 42-inch sleeve valves at the Wadsworth Pumping Plant at DVL.

Washington Street Pressure Control Structure Valve Replacement & Security Upgrades

The Washington Street Pressure Control Structure (PCS) located on the Palos Verdes Feeder was constructed in conjunction with the Palos Verdes Feeder pipeline in 1941. The pipeline has a design capacity of 100 CFS in this area. This project will replace two failing hydraulically operated globe valves at the Washington Street PCS. The work will include identifying and restoring all electrical components to new condition. Electrical components consist of electrical panel boards and grounding, sump pump, and associated instrumentation. Additionally, a security assessment of the facility will be conducted to determine the need to reinforce or upgrade physical features for enhanced infrastructure protection.

West Orange County Feeder OC-09 Rehabilitation

The West Orange County Feeder was constructed in 1956 as a component of the Lower Feeder system. It delivers treated water from the Robert B. Diemer Water Treatment Plant in Yorba Linda to the northwestern portion of Orange County. Service Connection OC-09 on the West Orange County Feeder consists of a turnout tee, a venturi meter, and a shutoff valve. The turnout tee is encased in concrete and is located beneath the traffic lanes of Katella Avenue in the city of Garden Grove, adjacent to the boundary line with the city of Stanton. The meter vault is located below Dale Street. This structure contains a 14-inch conical plug valve, a venturi meter, and associated piping and electrical systems. Gradual corrosion from over 60 years of operation in a damp underground environment has led to deterioration of the equipment within the vault. This equipment needs to be replaced to maintain reliable deliveries from the service connection. Preliminary Design Phase was authorized by the Board in October 2017.

West Orange County Feeder Valve Replacement

The West Orange County Feeder was constructed in 1956 as a component of the Lower Feeder system. It delivers treated water from the Diemer plant in Yorba Linda to the northwestern portion of Orange County. A recent condition assessment identified that 13 structures require rehabilitation, including the replacement of air release/vacuum valve assemblies and adjacent plug valves. These valves were installed during the original construction of the feeder and have been in service for over 60 years. Six of the air release/vacuum valves will also be relocated from a manhole to an above ground cabinet within the street-side parkway zone to prevent the potential of treated water in the distribution system becoming exposed to contaminants under certain operating conditions. Relocation is needed to comply with California State Water Resources Control Board requirements. Design and valve procurement were authorized by the Board in October 2017.

West Valley Feeder No. 1 - Access Road & Valve Structure Improvements

In 2001, a condition assessment of West Valley Feeder No. 1 identified that most of the blow-off valves, air release/vacuum valves, and sectionalizing valves were deteriorating and needed to be replaced. The existing valves were installed when the line was constructed in 1962 and no longer seal properly. Furthermore, several of the valves were directly buried and cannot be accessed without excavating the pipeline. This project will replace deteriorated valves, add valve structures, and improve access for maintenance and repairs. The work was prioritized and divided into three stages over multiple shutdown seasons to minimize the duration of pipeline outages. The first stage, which addressed 42 structures over four shutdown seasons, was completed in 2006. The second stage, which addressed 14 structures over two shutdown seasons, was completed in 2012. The third stage of work, which includes urgent improvements to the DeSoto Valve Structure in the city of Chatsworth, will add new valve structures in Chatsworth Park and replace valves located near Rinaldi Avenue. Design was authorized by the Board in October 2017.

Willits Street Pressure Control Structure

The Willits Street Pressure Control Structure (PCS), located in the city of Santa Ana, was built in 1944. This pressure control structure located on the Orange County feeder regulates pressure and conveys treated water to the Irvine Regulating Structure. This PCS is an underground structure consisting of three parallel trains of pressure control valves. At full capacity, two trains are in operation while the third train acts as a stand-by. The existing structure is congested and does not provide suitable access for maintenance, repairs or the replacement of valves. The maintenance access was impacted during street widening that required the size of the structure to be reduced. The modified structure configuration does not have a lifting mechanism to remove or transport these valves out of the structure for replacement or repairs. Additionally, the existing catwalk does not have adequate coverage. This project will construct a new pressure control structure to replace the existing Willits street PCS located on the Orange County Feeder. The work includes a new concrete substructure, relocating and replacing the control and isolation valves, new sampling connections for water quality and all necessary electrical and ventilation equipment. Once the new structure is complete, the older structure will be abandoned, and the pipeline will be attached to the new structure during a brief outage.

Yorba Linda Power Plant Enclosure & Control System Improvements

The Yorba Linda Power Plant is located on the Yorba Linda Feeder at the inlet to the Diemer plant and can generate up to 5 megawatts. Installation of a new turbine generator was authorized in November 2013. This project will provide for needed equipment features and enhancements not included in the scope of original generator replacement project. Design was authorized by the board in September of 2018. The features will increase the plant's reliability and longevity and address future maintenance and repair aspects of the Yorba Linda Power Plant. The scope of work includes design and construction of the following improvements: enclosure modifications to protect the generator unit and equipment from water intrusion; emergency shutdown, alarm, and public address system improvements; upgrades to the Human Machine Interface (HMI) panel; and procurement of critical spare parts. A construction contract for installation of the enclosure was authorized by the board in July 2019.

Pipelines, Tunnels, Canals Project Group

Casa Loma Siphon Barrel No. 1 - Improvements

In November 2016, leaks were detected on Barrel No. 1 of the Casa Loma Siphon. It was determined that the pipe has had significant horizontal and vertical movements. The leaks do not immediately jeopardize the structural integrity of the aqueduct but if repairs are not performed, the continued leakage over time could erode soil, undermine the siphon, and cause damage to the siphon structures. The Casa Loma Siphon Barrel No. 1 is vital to Metropolitan's conveyance system moving water from the desert pumping plants to Lake Mathews. The work is conducted in two stages. Under Project 1, internal seals were installed on 13 joints as an interim measure to address the leaks. These repairs were completed in February 2017, during a planned shutdown of the CRA. Project 2 will develop options to permanently repair the pipe joints within the siphon. The potential repairs may include installation or replacement of the existing sleeve-type couplings along with installation of recently developed earthquake-resistant pipe joints. Final design was authorized by the Board for Project No. 2 in May 2018. Further in December 2019 the Board awarded a pipe procurement contract for Project No. 2.

Casa Loma Siphon No. 1 and San Jacinto Pipeline Protection

The Casa Loma Siphon No. 1 and the San Jacinto Pipeline cross the San Jacinto River in Hemet, CA. The river experiences periodic high flows during severe storms, exposing the pipelines at the river crossing to damage due to exposure, undermining, or flotation. The scope of the project is to construct a weighted protective cover system, consisting of cable-connected articulated concrete blocks, spanning approximately 200 feet in length over Casa Loma Siphon No. 1 and the San Jacinto Pipeline. This project will enhance infrastructure safety, security, and resiliency, and will improve the reliability of water deliveries.

Etiwanda Pipeline (South) Protection - Sta. 332+00 to 349+00

The City of Rancho Cucamonga is planning to construct a grade separation on Etiwanda Avenue where the Etiwanda Pipeline is located, south of the Etiwanda Reservoir near the tie-in point to the Upper Feeder. Metropolitan is required to either relocate or protect its pipeline, at its own expense, to allow for improvements by the City. This project will protect or relocate the impacted portion of the Etiwanda Pipeline. Under the General Manager's Authority, a study to identify the scope and budget for design and construction was authorized in June 2019.

Etiwanda Pipeline Lining Replacement

The Etiwanda Pipeline was constructed in 1993 to convey untreated water from the Rialto Pipeline to the Upper Feeder. This 6.4-mile-long welded steel pipeline is 144 inches in diameter. The northern portion of the pipeline, which is 5.4 miles long, conveys high-pressure water to the Etiwanda Power Plant. From that facility, the southern portion of the pipeline continues for one mile to an interconnection with the Upper Feeder. During an internal inspection, staff discovered that approximately 37 percent of the northern portion of the line has missing or delaminated mortar lining. At the present time, the structural integrity of the pipeline remains sound. Over time, however, the loss of mortar lining will expose the pipeline to accelerated rates of corrosion and eventual leakage. This project will remove existing and failing cement mortar lining and install a flexible polyurethane lining system. Stages 1 and 2 of this three-stage project have been completed, and rehabilitation of the remaining 5.5 miles of the middle reach of the feeder will be completed under Stage 3. The Board authorized design of lining repairs in June 2016.

Lake Perris Bypass Pipeline Relining

The Lake Perris Bypass Pipeline is a 2.44-mile-long, 120-inch diameter prestressed concrete cylinder pipeline constructed in 1981 that extends from the Department of Water Resources (DWR)'s Santa Ana Valley Pipeline to Metropolitan's Lake Perris Pressure Control Facility. The majority of the Lake Perris Bypass Pipeline was constructed in fee property that is owned by DWR. In 1982, DWR granted MWD an easement for the pipeline within a specified alignment. Under the terms of the easement, Metropolitan is required to either relocate or protect its pipeline, at its own expense, to allow for improvements by DWR. DWR has been evaluating the need for improvements to the Lake Perris emergency release facility over the last several years. In early 2019, DWR notified Metropolitan that the planned improvements at Lake Perris would impact the bypass pipeline. Following staff's evaluation of pipeline protection options, it was determined that lining approximately 1,200 feet of the Lake Perris Bypass Pipeline with a steel liner is the most effective method to protect the pipeline. Design was authorized by the Board in November 2019.

Lakeview Pipeline Relining

The Lakeview Pipeline was constructed in 1973 to provide water from the East Branch of the State Water Project (SWP) to the Skinner area. Since it was completed, the Lakeview Pipeline has been shut down on numerous occasions to repair leaking joints. The line has experienced significant deformation which has caused leaks at pipe joints and loss of mortar lining. Due to the significant potential for corrosion of the pipeline, and the lack of structural integrity in many locations, permanent repairs should proceed expeditiously. In March 2015, in response to the ongoing state-wide drought, the Stage 1 repairs were completed. This work included lining a one-mile portion of the Lakeview Pipeline known as the Bernasconi Tunnel with a steel liner. In conjunction with the recently completed Lakeview Pipeline/Inland Feeder intertie, this improvement enables up to 200 cubic feet per second (cfs) of water stored in Diamond Valley Lake to be delivered to the Mills plant. The Stage 2 work includes lining 3.7 miles of the Lakeview Pipeline between the Inland Feeder's PC-1 control structure and the Perris Control Facility, along with installation of a 1,000-foot-long reach of 9.5-foot-diameter pipe to bypass the Perris Control Facility. Upon completion of the Stage 2 work, the Lakeview Pipeline will be capable of delivering up to 340 cfs from Devil Canyon through the Inland Feeder to the Mills plant, providing an alternate delivery route to the plant as backup to the Santa Ana Valley Pipeline. The future Stage 3 repairs will include lining the remaining 6.7 miles of the Lakeview Pipeline that extends from PC-1 to the San Diego/Casa Loma Canal junction structure. Stage 2 final design was authorized in December 2015.

Orange County Feeder Relining

The Orange County Feeder conveys treated water from the F. E. Weymouth Water Treatment Plant in La Verne to six member agencies in Los Angeles and Orange Counties. Recent internal inspections of the feeder have identified significant deterioration of the existing coal-tar enamel lining, which is 75 years old. While the pipeline's structural integrity remains sound at present, the interior lining displays blistering and disbonding, which expose the pipeline to accelerated rates of corrosion and eventual leakage. The lining needs to be repaired in order to maintain long-term reliability of the pipeline.

This project repairs the lining on the 11-mile-long Feeder, which is being accomplished in three stages. Stage 1 of this three-stage project has been completed, Stage 2 is under construction, and rehabilitation of the remaining four miles of the middle reach of the feeder will be completed under Stage 3. The stage 3 work includes replacement of the lining, welding of corroded pipe joints, and also replacement of deteriorated valves along the feeder. Design was authorized by the Board in November 2014, the valve procurement was authorized by the Board in September 2017, and construction of Stage 2 was authorized in June 2019.

Rehabilitation of Metallic and Concrete Pipelines Phase 1 - Select High Priority Feeders

Metropolitan's water delivery system consists of 830 miles of pipelines, of which 670 miles are comprised of reinforced concrete, welded steel, and cast-iron pipe. The majority of Metropolitan's non-PCCP lines were installed over 50 years ago. Experience has shown that degradation from corrosion of reinforced concrete and metallic pipelines can often develop undetected. Some of these pipelines are also showing signs of deterioration, as evidenced by several recent lining and joint repair projects (e.g., Etiwanda Pipeline, Orange County Feeder, and Lakeview Pipeline).

Phase 1 for high priority pipelines, including Santa Monica Feeder, Upper Feeder, Lower Feeder, and Middle Feeder, will include a complete risk assessment and prioritization of pipeline inspections, condition assessment of these high priority pipelines using prequalified inspection technologies, and recommendations for inspection technologies to be used for future condition assessments.

San Diego and Auld Valley Canals Concrete Repairs

The scope of this project is a comprehensive repair of damaged concrete liner within the San Diego and Auld Valley Canals. The repair work will need to be performed during an extended shutdown of the two canals, to the extent that demands, and storage can be accommodated. An extended outage of approximately 30 days will facilitate repair to priority areas and reaches of the canals, will shorten the overall repair timeline, and will reduce the risk of further deterioration. Failure of the liner in either canal will interrupt or reduce raw water deliveries to the Skinner plant and to various downstream member agencies and sub-agencies. The canals are the sole conveyance route for Colorado River water and State Project water to the Skinner plant.

San Diego Pipelines 1 and 2/Rainbow Tunnel Improvements

The San Diego Pipelines 1 and 2 were built in the 1940's and have multiple diameters and pipe materials consisting of steel, precast concrete cylinder pipe, and precast non-cylinder pipe. Some of the steel section have cement mortar lining, the remaining sections all have coal tar lining. The Rainbow Tunnel has an approximate 72-inch diameter, and is horseshoe shaped. A recent inspection identified sections where the lining needs replacement. Several valves at turnout structures have reached the end of their service lives and require replacement. This project will perform a detailed evaluation of the pipelines and tunnel and appurtenant structures and replace the damaged lining and refurbish or replace other and components as needed.

Santa Monica Feeder Cast Iron Pipe Rehabilitation

The Santa Monica Feeder was constructed in 1941 as part of Metropolitan's original distribution system. The feeder is approximately 25 miles long, with a diameter ranging from 28 inches to 120 inches. The feeder has various reaches comprised of cast iron, welded steel, and reinforced concrete pipe. The Santa Monica Feeder delivers treated water from the Eagle Rock Control Facility in the city of Los Angeles to four member agency service connections before reaching its terminus in the city of Santa Monica. This project will assess the condition of the cast iron portion of the Santa Monica Feeder using emerging inspection technologies. The cast iron portion of the pipeline is eight miles in length and located between the Hollywood Tunnel North Portal to the Santa Monica Feeder terminus near the Santa Monica Service Connection SMN-01. This is the last section of cast iron pipe in Metropolitan's distribution system. The assessment is anticipated to include leak detection, pipe wall thickness inspection, and internal seal installation by contractor for joint repairs as needed. Following the condition assessment, a long-term plan will be prepared to monitor, and replace and/or rehabilitate the Santa Monica Feeder cast iron pipe. In anticipation of potential prolonged outages, various operational modes will be investigated and designed to maintain reliable flow to service connections. Also, hydraulic and structural analyses will be performed on the pipeline with design recommendations to address various operational conditions and scenarios such as, seismic events and pressure surge episodes.

Upper Feeder - Lining Replacement at the Santa Ana River Bridge

The Upper Feeder was constructed between 1933 and 1941 with a 116-inch-diameter steel pipe and lined with coal tar enamel liner (CTE). This portion of the Upper Feeder is located above ground and crosses the river bed via a bridge. Exposure to the sun subjects the pipeline to a thermal cycle that is continuous heating and cooling

of the pipe material. Over the past five years, staff have performed inspections on this segment of the Upper Feeder and determined that approximately 90% of the pipe's internal lining has failed. Mild to moderate pitting on the interior of the pipe indicate rust tuberculation and corrosion. This project will reline approximately 1,000 feet of the 116-inch diameter pipeline with an approved liner material.

Distribution System - Other Project Group

Chloramine Booster Station at Three Locations within the Treated Water Distribution Systems

Metropolitan uses chloramines, formed by combining chlorine and ammonia, as a disinfectant in our distribution systems. Internal research has determined the most effective chloramine concentration to prevent microbial growth at low flow conditions. Addition of chlorine and LAS in the treated water distribution systems will allow the total chlorine residual within the distribution system to be maintained at or above 1.8 mg/L, especially during low demand periods. LAS is recommended instead of aqueous ammonia because LAS has fewer regulatory requirements, as well as lower construction and operating costs. The project will determine the three optimum locations to install: (1) sodium hypochlorite and LAS tanks, (2) feed pumps and appurtenances, (3) piping, and (4) instrumentation and control systems to ensure the safety and reliability of the feed systems.

Diamond Valley Lake Crane Rehabilitation

The scope of the project is repair and rehabilitation of the 25-ton gantry crane at the Diamond Valley Lake Inlet/Outlet Tower. The project will also include a study to evaluate the possibility of increasing the crane capacity to enable it to be used as an alternative lifting device for the emergency drop gate in the event of a failure of the drop gate's normal hydraulic lifting system. This project will enhance infrastructure safety, security, and resiliency, and will enhance the reliability of water deliveries.

Diamond Valley Lake Oxygenation System

This project will construct a liquid oxygen (LOX) storage and feed system at Diamond Valley Lake to improve water quality, reduce impacts of cyanobacterial blooms, and maintain operational flexibility to ensure reliable and high-quality water deliveries under drought and emergency conditions. The LOX system will maintain oxygenated conditions in the deeper waters of DVL and prevent the formation of reduced compounds (sulfides, metals) that interfere with water treatment processes. This will allow for high-quality water to be released from the reservoir year-round. The system consists of: (1) a LOX tank; (2) evaporators to convert LOX to gas; (3) supply lines to deliver oxygen; (4) diffusers to mix the oxygen; (5) and a control system to regulate oxygen flow.

Diamond Valley Lake Forebay Concrete Joint Seal Replacement

The concrete joint seals in the Diamond Valley Lake (DVL) Forebay have been in service for over 20 years and have far exceeded the typical service life of two to five years. Division of Safety of Dams (DSOD) had previously directed Metropolitan to address seal replacement at the DVL Spillway; that replacement was completed in 2018. Based on a Metropolitan inspection in July 2018, the Forebay seals are in similar condition to the Spillway seals. Non-compliance with DSOD's policy may result in issuance of written citations, limits on the reservoir's operating water surface level, or revocation of the dam's certified status. This project will remove deteriorated and de-bonded joint seals at the DVL Forebay (approximately 150,000 linear feet), and replace with a new, cost-effective and high-performance MWD-approved sealant.

East Lake Skinner Bypass & Bypass No. 2 Screening Structure Upgrade

The East Lake Skinner Bypass Slide Gates were built 50 years ago in 1967 and are in need of rehabilitation. The gates are binding during operation which is rendering them inoperable. In addition, the East Lake Skinner Bypass Afterbay Trash Rack needs to be replaced with a new stainless-steel rack to minimize the corrosion which caused the existing galvanized material to collapse under the weight of a severe algae bloom during bypass operations. The scope of work consists of reconditioning three of the East Lake Skinner Bypass Slide

Gates, and to replace the East Lake Skinner Bypass Afterbay trash rack which is severely corroded and partially collapsed. In addition, this project will modify the East Lake Skinner Bypass Algae Screening Mechanisms Discharge Piping to bypass the Algae Shakers and upgrade the Lake Skinner Bypass No. 2 Forebay Trash Rack Lifting Mechanisms.

East Orange County Feeder No. 2 Seismic Retrofit at Diemer Water Treatment Plant

A recent assessment identified a slope near the south western pad at the Diemer plant as having the potential to damage the East Orange County Feeder No. 2 pipeline during a significant earthquake. The pipeline may no longer meet current seismic codes and regulations. This structure requires further analysis to ensure that it meets Metropolitan's current structural standards and the facility is reliable in the event of seismic activity. This project will assess, design, and complete seismic retrofit construction near the south western pad at the Diemer plant.

Garvey Reservoir Ammonia Feed System

This project will involve the design, procurement, and installation of liquid ammonium sulfate (LAS) storage feed systems at Garvey Reservoir. Addition of LAS at Garvey Reservoir influent and effluent will allow total chloramine residual within the distribution system to be maintained at or above 1.8 mg/L, especially during low demand periods. LAS is recommended instead of aqueous ammonia since LAS has fewer regulatory requirements and lower construction and operating costs. This project will include the installation of LAS tanks, feed pumps and appurtenances, piping, and instrumentation and control systems to ensure the safety and reliability of the feed system.

Garvey Reservoir Drainage & Erosion Control Improvements

Garvey Reservoir was constructed in 1954 as a component of the Middle Feeder system. The reservoir receives treated water from the Weymouth plant and has a maximum storage volume of 1,600 acre-feet. The reservoir is located within the city of Monterey Park on a hill that is surrounded on the west and south by residential properties that are lower in elevation. During significant storm events, surface runoff collects and flows downhill through improved drainage systems and natural drainage courses to Metropolitan's property boundaries. Connecting off-site drainage systems that were constructed by developers more than 50 years ago do not meet current minimum design standards and have deteriorated over time. Recognizing the mutual benefit of addressing runoff issues from the reservoir, Metropolitan entered into an agreement with the city of Monterey Park to implement drainage and erosion control improvements both within Metropolitan's property, and improvements to drainage in city streets. There are 11 geographically defined drainage zones at Garvey Reservoir to be mitigated. In October 2016, Metropolitan's Board authorized design for 8 of the 11 zones. Construction for five drainage zones has been completed.

Garvey Reservoir Sodium Hypochlorite Feed System Upgrades

Upgrades to the sodium hypochlorite feed system at Garvey Reservoir are needed to maintain treated water quality within the Central Pool portion of Metropolitan's distribution system. The existing hypochlorite system has exceeded its expected service life and has deteriorated over time, requiring frequent repairs. Failure of the chemical feed system would negatively affect water quality within the distribution system by not maintaining minimum chlorine residual. This project will replace the current hypochlorite system with new valves, piping, electrical systems, and instrumentation and updated controls that will allow both automated and remote control of the chemical feed system. Design was authorized by the Board in June 2013.

Lake Mathews Aboveground Storage Tank Replacement

The Lake Mathews existing diesel aboveground storage tank does not conform to current regulations and needs to be removed from service. In its present condition the tank cannot be operated in a safe manner. The Lake Mathews Spill Prevention Countermeasure and Control Plan cannot be certified as long as the diesel aboveground storage tank remains in service. This project will replace the existing 10,000-gallon diesel fuel aboveground storage tank (AST) with its associated containment dike, venting, fill system, level monitoring, fuel dispensing system, catwalk, and continuous release detection system with a new 6,000-gallon AST system, and design and construct a roof over the storage tank containment and unloading area. Under the General Manager's authority, design, procurement and construction was authorized in March 2019.

Lake Mathews Electrical Reliability

The existing electrical distribution system at Lake Mathews constructed during the 1930s needs to be upgraded for reliability. This system has been in service for over 75 years and serves the lake's outlet towers and junction shaft, hydroelectric plant, forebay, chlorination system, administrative offices, and maintenance and repair shops. The electrical distribution system is outdated, has experienced numerous overloads, and lacks capacity for planned additional equipment. The system needs to be upgraded to maintain reliability and meet future power demands. Planned upgrades include replacing the underground and overhead distribution lines; replacing the existing unit power centers and adding additional unit power centers where needed; and integrating the new electrical system with Metropolitan's system-wide supervisory control and data acquisition system. Preliminary design was authorized by the Board in March 2017.

Lake Mathews Perimeter Fencing Upgrade

Lake Mathews is the terminus of the CRA. Water is stored in Lake Mathews Reservoir, withdrawn through the lake's main outlet towers into the forebay, and is then conveyed through the Upper Feeder and Lower Feeder to the Weymouth and Diemer plants, respectively. The existing chain link fencing along the approximately 15-mile perimeter of the Lake Mathews facility has deteriorated and is ineffective at preventing intrusions. The fencing can be easily cut, resulting in an increase in break-ins and illegal dumping through the fencing. This project will replace the existing five-foot tall chain link fencing with eight-foot tall, anti-cut, anti-climb security fencing, constructed of steel or wrought iron. This project will enhance infrastructure safety, security, and resiliency, and will improve security and emergency response.

Lake Mathews Sodium Hypochlorite Injection System

Update and redesign the Lake Mathews sodium hypochlorite injection system to relocate the injection point to a location that will minimize the impacts of chlorine injection on the forebay and appurtenant structures. The design will also consider effective Quagga Mussel control, enhancing safety and reliability of the injection system, and adherence to water quality goals and requirements. The project will develop options to replace the existing interim sodium hypochlorite system at the Lake Mathews Forebay with a system at Lake Mathews Outlet Tower No. 1 and Outlet Tower No. 2, and to provide continuous chemical injections from the towers through the Lake Mathews Forebay, Power Plant, and into the Upper and Lower Feeders.

Lake Skinner West Bypass Screening Structure Rehabilitation

The San Diego Canal West Bypass Screening Structure is located at the terminus of the San Diego Canal and is the starting point for water which bypasses Lake Skinner to downstream users. The bypass screening structure is fitted with an electrically powered revolving screen extending across the channel, which dips into the channel to intercept and collect algae mats and other floating debris. This system prevents algae mats and other debris from entering the treatment plant or member agency water systems via the bypass pipelines. The screening equipment was installed in the 1960s and has reached the end of its useful life. The screens' rotating components are currently inoperable, so they function as stationary screens; material collects on the screens until the debris is manually removed. Clogged screens may reduce deliveries to downstream users. Preliminary design was authorized by the Board in September 2007.

Live Oak Reservoir Bypass Pipeline Cathodic Protection

Constructed in 1973, the Live Oak Reservoir Bypass (LORB), Inlet, and Outlet Pipelines are dielectrically coated welded steel pipelines with a diameter of 97 inches and are approximately 0.6 miles long. The 24-inch dielectrically coated Desilting pipeline ties in to the Outlet pipeline, crosses the Bypass pipeline and is approximately 800 feet long. The LORB connects the prestressed reaches of the Rialto Pipeline to the east and the west. The pipeline is one of the few reaches of welded steel pipe that is not yet cathodically protected. A failure of the Live Oak Reservoir Bypass would inhibit Metropolitan's ability to convey water through its system and potentially disrupt Metropolitan's ability to deliver water to several member agencies. The scope of work is to design and install a comprehensive cathodic protection system in the Live Oak Reservoir Bypass. Design was authorized by Metropolitan's Board in April 2018.

Orange County C&D Team Support Facility

O&M support functions for the 700-square-mile Orange County region of the distribution system are being performed from temporary trailers, shipping containers, and an aging warehouse. A permanent service center is required and will provide local storage of materials and equipment, house staff, and contain shops for minor repairs. A permanent facility will provide a safer and more efficient workplace to support shutdowns, routine maintenance activities, and urgent repairs. The scope of the construction contract includes: (1) site development work which includes: vehicle parking; perimeter lighting; storm water system; utility extensions including potable water, sewer, natural gas, and electrical service; and hazardous material storage; and (2) building construction which includes: offices and workspace for approximately 24 staff; a welding/fabrication shop with specialized equipment including a drill press, band saw, grinder, welder, parts cleaner, welding hood, and 3-ton bridge crane; a pipe and conduit-bending area; work bench and parts cleaning areas; and tool crib and storage areas for fabrication and welding supplies. Construction was authorized by the Board in March 2018.

Orange County Feeder Cathodic Protection System Rehabilitation

The Orange County Feeder conveys treated water from the F. E. Weymouth Water Treatment Plant in La Verne to its terminus at service connection CM-1 in Newport Beach. The feeder is approximately 41 miles long and was installed in 1942. The feeder consists of approximately 21 miles of welded and un-bonded steel pipe, 19 miles of precast concrete pipe, and one mile of prestressed concrete cylinder pipe. Previously, cathodic protection could not be effectively applied to the subject reach; however, recent pipeline rehabilitation has made cathodic protection a viable option to prevent external corrosion and thus prevent future pipe leaks. This project will install a new cathodic protection system on the Orange County feeder to protect approximately 11.2 miles of feeder. The scope of work includes design and installation of the anodes and rectifier system.

Palos Verdes Reservoir Sodium Hypochlorite and Liquid Ammonia Sulfate Storage and Chemical Feed System and Security Upgrades

This project will replace the 12,000-gallon fiber-reinforced plastic (FRP) sodium hypochlorite (NaOCl) storage tank and appurtenant fittings at the Palos Verdes Reservoir (PVR). The existing FRP tank, manufactured in 1992, is well past its recommended service life of 6-10 years. The FRP tank will be replaced with two 6,000-gallon titanium tanks, which are designed to last 50-70 years and do not corrode in the presence of sodium hypochlorite. Further, modifications to the tank farm feed systems are required to meet revised minimum flow and dosage requirements recently directed by Water Quality and Member Agency demands. Lastly, security cameras will also be added around the PVR facility in order to provide increased security monitoring.

Platform Replacement at Various C&D Structures

Platforms at various Conveyance and Distribution (C&D) structures are deteriorating due to age and damp environment. The steel platforms and support frames were installed almost 50 years ago, and do not meet current OSHA standards. This project will replace older steel platforms and support frame systems at various Western Region facilities, encompassing an area from Foothill Pressure Control Structure in Castaic to Yorba Linda Feeder in La Verne, as well as facilities in between. Approximately 2,700 square feet of steel platforms

have been identified for replacement with fiberglass reinforced plastic grating.

San Gabriel Tower and Spillway Improvements

The San Gabriel Tower (SGT), 86-foot-tall free-standing with a 24-foot by 14-foot rectangular base, was constructed in 1936, north of the city of Azusa. It sits at the base of the steep and weathered San Gabriel Mountains, between the west portal of Monrovia Tunnel No. 1 and the east portal of Monrovia Tunnel No. 2. The tower is surrounded by Angeles National Forest and is adjacent to Morris Reservoir. The function of the SGT is to regulate and isolate flows from the Weymouth plant via the Upper Feeder pipeline to the Eagle Rock Control Facility located in the city of Los Angeles. It is situated between two active faults, the Sawpit and the Sierra Madre faults, which are both capable of generating a magnitude 6.5 earthquake. While the tower was designed and constructed to the codes and standards in place during the 1930s, significant advancements have been made since that time in predicting the response and performance of structures as a result of seismic ground shaking. Planned upgrades to the San Gabriel Tower include: (1) reducing the height of the tower to increase its structural stability; (2) capping the tower with a protective slab designed to withstand a potential debris slide or rockfall; (3) adding new vacuum relief valves for surge protection; (4) replacing the slide gates and actuators to restore isolation capability for the Upper Feeder; (5) improving access to the tower and spillway, including the river crossing; (6) repairing the spillway's concrete; and (7) stabilizing the adjacent rocky slope. Preliminary design was authorized in March 2018.

Santa Monica Feeder Cathodic Protection

The Santa Monica Feeder is a mortar coated welded steel pipeline with a diameter of 49-inches and is approximately 4.25 miles long. The pipeline is one of the few reaches of welded steel pipe that is not yet cathodically protected. A failure of the Santa Monica Feeder would inhibit Metropolitan's ability to convey water through its system and potentially disrupt Metropolitan's ability to deliver water to several member agencies. The scope of work is to design and install a comprehensive cathodic protection system in the Santa Monica Feeder. Design was authorized by Metropolitan's Board in April 2018.

Santiago Control Tower Seismic Improvements

The Santiago Control Tower acts as a control and diversion facility for water supplied to the Santiago Lateral pipeline, the Santiago Lateral Spillway Discharge Pipeline, and the Lower Feeder pipeline. This project will evaluate the Santiago Control Tower's ability to resist expected seismic forces based on the latest geotechnical and geological considerations. A detailed geotechnical analysis is required to determine the structure's interaction with surrounding soil and analyze the soil stability of the structure. The structure is located in close proximity to the Whittier Fault on a raised area adjacent to a slope.

Skinner Bypass Pipelines Cathodic Protection

The Lake Skinner Bypass Pipeline # 1 (97-inch diameter), Lake Skinner Bypass Pipeline #3 (49-inch diameter), and Skinner Plant effluent Conduit # 1 (7-inch diameter) alignments have portions traversing inside and outside of the Skinner Treatment Plant property. The three pipelines are dielectrically coated steel pipelines. The original impressed current cathodic protection system was installed in 1980. The system was turned off as concerns emerged about exposing prestressed pipelines to cathodic protection. In addition, several modifications to the pipelines made the existing system unsuitable for the present pipeline configurations. The existing cathodic protection system requires full rehabilitation to adequately protect the pipeline from corrosion. A failure of the Feeders would inhibit Metropolitan's ability to convey water through its system and potentially disrupt Metropolitan's ability to deliver water to several member agencies. The scope of work is to design and install a comprehensive cathodic protection system in the feeders. Design was authorized by Metropolitan's Board in April 2018.

Soto St. Facility - Security & HVAC Replacement

The Soto Street Facility serves as the main headquarters for staff and equipment that support the Western Region Unit (WRU) Conveyance and Distribution System. The WRU Incident Command Post, located in the Administration Building, also serves as the backup Emergency Operations Center for the Eagle Rock Operations Center. The Soto Street Facility currently has two layers of access control protection during business hours: a single card reader at the outer vehicle gate, and a single contracted security guard. During periodic foot patrols of the facility, the access gate is left unmanned. In addition, the alarm system is currently inoperable, and there are no access card readers on any of the exterior building doors, which remain unlocked during business hours. There have been recent multiple security events at this facility. Finally, the existing air handling unit that serves the Soto Street Administration Building has been in service since the 1960s, when the building had a different configuration. The current HVAC system does not provide adequate airflow to all parts of the building.

This project will improve the security of the Soto Street Facility by adding access card readers and security cameras, providing security lamination to glass doors and windows, replacing the alarm system, and upgrading the HVAC system for the Administration Building.

Upper Feeder Blow Off Structure Replacement

Blow-off structures provide a means to completely drain a pipeline for emergencies, inspections, repairs, and general maintenance. The Upper Feeder Blow-Off Structure, located in the city of Sierra Madre, discharges the Upper Feeder directly into the Little Santa Anita Wash. The valves and piping in this structure have been in service for almost 80 years, and have reached the end of their service life. One valve is stuck in the closed position, and another is experiencing leakage. In addition to a variety of different sizes and configurations of pipe within the structure, the structure itself does not comply with some of the safety and design features of more modern structures. This project will replace and enhance the Upper Feeder Blow-Off Structure in order to ensure reliable dewatering capability and comply with OSHA standards.

Wadsworth Pumping Plant Stop Logs

The Wadsworth Pumping Plant was built with 12 pump/generation units. Units 1, 5, and 9 were decommissioned to allow DVL generation to be certified as “renewable energy” by the California Energy Commission. Hydroelectric plants are required to have a nameplate capacity of 30 MW or less to be certified. At 3.3MW per unit, the nine remaining units provide a generation capacity of 29.7MW. Generated energy must be certified renewable for electric utilities to meet the requirement that 33% of their energy come from renewable resources by 2020. The stop logs would provide a means to isolate the three decommissioned pumps from the DVL forebay keeping them out of the water and dry. Isolating the pumps from water contact reduces corrosion damage to the pumps and provides flexibility in the event pump/generation units need to be re-commissioned or repaired. This project will fabricate three sets of stop logs to isolate three decommissioned Wadsworth plant generation/pumping units from the forebay. Each set of stop logs consists of three stop log sections, for a total of nine sections of stop logs to isolate three pump units.

Wadsworth Pumping Plant Fire Protection System Upgrades

The Wadsworth Pumping Plant is located near Hemet at Metropolitan’s Diamond Valley Lake (DVL). The pumping plant includes 12 vertical turbine pumps that are used to pump water into DVL or to generate electricity when water flows out of DVL into the forebay/San Diego Canal. Each pump/generator has a dedicated CO2 fire suppression system to prevent fires from spreading from one unit to another. However, the system is designed so that if the fire suppression system is inactive, the pump/generator will not operate. Some components of the current fire suppression system and control panels have been in service for almost 20 years and need to be replaced. In addition, the fire alarm system for the Wadsworth building is antiquated, and replacement parts are no longer available. This project will upgrade Wadsworth’s fire suppression system by: (1) replacing the existing individual CO2 fire suppression systems for the operational vertical turbine pumps, and (2) upgrading the Wadsworth building fire alarm system.

West Orange County Feeder Cathodic Protection

The West Orange County Feeder (WOCF) was constructed in 1956, and is mortar and dielectrically coated welded steel pipeline with a diameter of 43-inches and 55-inches. The pipeline is approximately 13 miles long. The WOCF connects to the cathodically protected Orange County Feeder (OCF), prestressed and steel reaches of the Second Lower Feeder (SLF), and the cathodically protected Lower Feeder (LF). The pipeline is one of the few reaches of welded steel pipe that is not yet cathodically protected. A failure of the WOCF would inhibit Metropolitan's ability to convey water through its system and potentially disrupt Metropolitan's ability to deliver water. The scope of work is to design and install a comprehensive cathodic protection system in the WOCF. Design was authorized by Metropolitan's Board in April 2018.

District Housing and Property Improvements Program

Fiscal Year 2020/21 Estimate: \$3.5 million

Fiscal Year 2021/22 Estimate: \$7.5 million

Program Information: *The District Housing & Property Improvements Program is comprised of projects to refurbish or upgrade workforce housing at Metropolitan to enhance living conditions to attract and retain skilled employees.*

Accomplishments for FY 2018/19 and FY 2019/20

- Two new projects initiated during the last biennium:
 - District Housing Property Improvements
 - Employee Village Enhancement

- Major milestones achieved during the last biennium:
 - District Housing Property Improvements - began property assessments
 - Employee Village Enhancement - began master planning

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|-------------------------------|------------------------|----------------------|--------------------------|
| District Housing Improvements | \$ 71,000,000 | 2026 | Complete assessments |
| Employee Village Enhancement | \$ 26,000,000 | 2028 | Complete master planning |

Housing & Property Improvements Project Group

District Housing Improvements

Metropolitan owns 89 houses throughout the five CRA pumping plants and rents to employees involved in operation and maintenance of the CRA. Renovation of up to 89 houses was authorized by the Board in May 2017. A Pilot renovation project of 11 out of the 89 was completed in 2018. Another 9 will be renovated to complete the pilot effort, equaling a remaining total of 69 houses left to be renovated or replaced. Overview Assessment Report was completed in November 2019.

Employee Village Enhancement

Perform comprehensive master planning for four Colorado Pumping Plant Villages. The initial goal and objective are to develop a proof of conceptual master plan for Eagle Mountain Village that would focus on building a vibrant, healthy, and sustainable community for Metropolitan’s staff. The conceptual master plan will also incorporate comments made the Board in December 2015, and feedback received from residents in 2019. When the conceptual master plan is approved, the scope of this project will extend to include the three other villages (Hinds, Iron, and Gene).

Minor Capital Projects Program

Fiscal Year 2020/21 Estimate: \$3.8 million

Fiscal Year 2021/22 Estimate: \$5.4 million

Program Information: The Minor Capital Projects (Minor Cap) Program is comprised of projects, with an estimated cost of less than \$400,000, that require rapid response to address unanticipated failures, safety or regulatory compliance concerns, or to take advantage of shutdown opportunities. The Minor Cap Program authorizes the General Manager to execute projects that meet defined criteria without seeking additional Board approval.

Accomplishments for FY 2018/19 and FY 2019/20

- New projects initiated during the last biennium thru December 2019:
 - Thirty-five projects were initiated during the last biennium

- Major milestones achieved during the last biennium thru December 2019:
 - Twenty-eight projects were completed during the last biennium

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|--|--|----------------------|--|
| Various projects costing less than the Board approved maximum project cost * *Prior to Fiscal Year 2018/19 - \$250,000 Currently - \$400,000 | \$50,000,000 for projects in open and new Minor Cap Appropriations | 2025 | Complete all projects within 3 years of initiation |

Prestressed Concrete Cylinder Pipe (PCCP) Reliability Program

Fiscal Year 2020/21 Estimate: \$30.3 million

Fiscal Year 2021/22 Estimate: \$23.6 million

Program Information: The PCCP Reliability Program is composed of projects to refurbish or upgrade Metropolitan's PCCP feeders to maintain water deliveries without unplanned shutdowns.

Accomplishments for FY 2018/19 and FY 2019/20

- New projects initiated during the last biennium:
 - Second Lower Feeder PCCP Rehabilitation - Reach 9
 - Sepulveda Feeder PCCP Del Amo Blvd. Urgent Relining

- Major milestones achieved during the last biennium:
 - Three projects completed construction
 - Second Lower Feeder Reach 1
 - Second Lower Feeder Reach 4
 - Sepulveda Feeder PCCP Del Amo Blvd. Urgent Relining
 - Awarded procurement of large sectionalizing valves and over 200 smaller shut-off valves
 - One project completed design
 - Second Lower Feeder Reach 2

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|---|------------------------|----------------------|---|
| Electromagnetic Inspections of PCCP Lines | \$ 12,000,000 | Ongoing | Continue inspections in conjunction with pipeline shutdowns |
| Second Lower Feeder PCCP Rehabilitation - Reach 2 | \$ 65,000,000 | 2020 | Complete construction |
| Second Lower Feeder PCCP Rehabilitation - Reach 3 | \$ 77,000,000 | 2024 | Complete design and begin construction |
| Second Lower Feeder PCCP Rehabilitation - Reach 8 | \$ 35,000,000 | 2022 | Complete design and construction |

Allen McColloch Pipeline Project Group

Allen-McColloch Pipeline PCCP Rehabilitation

The planned rehabilitation work involves lining the existing PCCP segments with steel liner pipe designed as a stand-alone pipeline which can accommodate full internal and external pressures on the line and replacing any identified damaged lining in non-PCCP segments. The project includes restoring the (Allen McColloch, Rialto Pipeline, Calabasas, Sepulveda, Second Lower) pipeline/feeder to “As Like New Conditions” as possible. This would include relocation of all air release and vacuum valves (AR/VV) that have not already been relocated above ground and evaluating and possible replacement of sectionalizing, service connection turnout, pumpwell, AR/VV, shutoff, and blowoff valves, etc. In addition, the project includes procurement of any needed permanent or temporary right of way and evaluation and possible replacement or modification of all master meters and meter structures.

Calabasas Feeder Project Group

Calabasas Feeder PCCP Rehabilitation

The planned rehabilitation work involves lining the existing PCCP segments with steel liner pipe designed as a stand-alone pipeline which can accommodate full internal and external pressures on the line and replacing any identified damaged lining in non-PCCP segments. The project includes restoring the (Allen McColloch, Rialto Pipeline, Calabasas, Sepulveda, Second Lower) pipeline/feeder to “As Like New Conditions” as possible. This would include relocation of all air release and vacuum valves (AR/VV) that have not already been relocated above ground and evaluating and possible replacement of sectionalizing, service connection turnout, pumpwell, AR/VV, shutoff, and blowoff valves, etc. In addition, the project includes procurement of any needed permanent or temporary right of way and evaluation and possible replacement or modification of all master meters and meter structures.

Rialto Feeder Project Group

Rialto Pipeline PCCP Rehabilitation

The planned rehabilitation work involves lining the existing PCCP segments with steel liner pipe designed as a stand-alone pipeline which can accommodate full internal and external pressures on the line and replacing any identified damaged lining in non-PCCP segments. The project includes restoring the (Allen McColloch, Rialto Pipeline, Calabasas, Sepulveda, Second Lower) pipeline/feeder to “As Like New Conditions” as possible. This would include relocation of all air release and vacuum valves (AR/VV) that have not already been relocated above ground and evaluating and possible replacement of sectionalizing, service connection turnout, pumpwell, AR/VV, shutoff, and blowoff valves, etc. In addition, the project includes procurement of any needed permanent or temporary right of way and evaluation and possible replacement or modification of all master meters and meter structures.

Second Lower Feeder Project Group

Second Lower Feeder PCCP Rehabilitation

The planned rehabilitation work involves lining the existing PCCP segments with steel liner pipe designed as a stand-alone pipeline which can accommodate full internal and external pressures on the line and replacing any identified damaged lining in non-PCCP segments. The project includes restoring the (Allen McColloch, Rialto Pipeline, Calabasas, Sepulveda, Second Lower) pipeline/feeder to “As Like New Conditions” as possible. This would include relocation of all air release and vacuum valves (AR/VV) that have not already been relocated above ground and evaluating and possible replacement of sectionalizing, service connection turnout, pumpwell, AR/VV, shutoff, and blowoff valves, etc. In addition, the project includes procurement of any needed permanent or temporary right of way and evaluation and possible replacement or modification of all master meters and meter structures.

Sepulveda Feeder Project Group

Sepulveda Pipeline PCCP Rehabilitation

The planned rehabilitation work involves lining the existing PCCP segments with steel liner pipe designed as a stand-alone pipeline which can accommodate full internal and external pressures on the line and replacing any identified damaged lining in non-PCCP segments. The project includes restoring the (Allen McColloch, Rialto Pipeline, Calabasas, Sepulveda, Second Lower) pipeline/feeder to “As Like New Conditions” as possible. This would include relocation of all air release and vacuum valves (AR/VV) that have not already been relocated above ground and evaluating and possible replacement of sectionalizing, service connection turnout, pumpwell, AR/VV, shutoff, and blowoff valves, etc. In addition, the project includes procurement of any needed permanent or temporary right of way and evaluation and possible replacement or modification of all master meters and meter structures.

PCCP - Other Project Group

Electromagnetic Inspections of PCCP Lines

All PCCP lines within the distribution system are inspected every three to seven years. The frequency is based on the condition and history of repairs for each feeder. Three cycles of electromagnetic testing have been completed to date on Metropolitan’s PCCP feeders. This project will perform the fourth cycle of inspections over the next five years. Planned activities for the inspections include: scheduling and coordination of shutdowns; conducting the electromagnetic inspections; conducting internal visual inspections; shutting down and dewatering the feeders and returning them to service; analyzing the inspection results; and preparing comprehensive inspection reports.

Regional Recycled Water Program

Fiscal Year 2020/21 Estimate: \$ 0.2 million *

Fiscal Year 2020/21 Estimate: \$0 million *

* Planned spending is only for completion activities for the Advanced Water Treatment Demonstration Plant and continuance of advance planning pending Board approval of an action plan.

Program Information: *The Regional Recycled Water Program includes the design and construction of the Advanced Water Treatment Demonstration Plant, which represents the initial step in development of a potential regional recycled water system for recharge of groundwater basins within Southern California. The biennial budget separately includes \$15 million per year for RRWP planning and design costs.*

Accomplishments for FY 2018/19 and FY 2019/20

- Major milestones achieved during the last biennium:
 - Completed construction of a 0.5 mgd Advanced Water Treatment Demonstration Plant project

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|---|------------------------|----------------------|--------------------------|
| Advanced Water Treatment Demonstration Facility | \$ 21,000,000 | 2022 | Complete record drawings |

Regional Recycled Water - All Project Group

Advanced Water Treatment (AWT) Plant

The Advanced Water Treatment Plant (AWT) will be located at Los Angeles County Sanitation District (LACSD)’s Joint Water Pollution Control Plant (JWPCP) in Carson. The 150 mgd AWT will treat water for Indirect Potable Reuse (IPR) and in the future for Direct Potable Reuse (DPR) purposes. The AWT will use membrane bioreactors (MBR), reverse osmosis, and Ultraviolet advanced oxidation processes (UV-AOP) to produce purified water that will be conveyed to recharge facilities for groundwater augmentation. The project will include engineering studies, preliminary and final design, bidding, construction, and construction management. Consideration of the Regional Recycled Water Program (RRWP) AWT by the Board of Directors is anticipated after 2022 after completion of the environmental documentation (PEIR), with construction to be completed by approximately 2031.

Regional Recycled Water - Conveyance Facilities

The conveyance facilities for the RRWP will convey purified water from the new Advanced Water Treatment Plant (AWT) located at LACSD’s JWPCP in Carson to various recharge facilities along the backbone pipeline to the Santa Fe Dam area in Irwindale, CA, approximately 36 miles away. The RRWP will have a capacity of 150 mgd. The purified water will be used for IPR and in the future for DPR purposes. The conveyance project will include engineering studies, preliminary and final design, bidding, construction, and construction management. Consideration of the RRWP conveyance pipeline by the Board of Directors is anticipated after 2022 after completion of the environmental documentation (PEIR), with construction to be complete by approximately 2034.

Regional Recycled Water - Programmatic EIR/Technical Assistance

For large multi-year, multi-phase infrastructure programs like the RRWP, CEQA allows a tiered approach for environmental review. The environmental process will begin with an overall Programmatic Environmental Impact Report (PEIR). The PEIR will analyze the discernable effects of the entire program. Where data is not initially available to fully analyze the impacts, the analyses of these areas will be deferred, and a project-specific environmental analysis will be conducted. The PEIR will be supported with technical assistance and public outreach efforts as necessary.

Advanced Water Treatment Demonstration Plant

The Regional Recycled Advanced Purification Center (APC) is located at LACSD's JWPCP in Carson. The 0.5 mgd APC demonstration plant is testing the effectiveness of various advanced water treatment processes. Construction of the APC was completed in October 2019, with Phase 1 testing for tertiary MBR being performed through 2020. The demonstration plant will establish design criteria and confirm treatment costs for the full-scale facility, and will support the program's public outreach effort. Construction of the Demonstration Plant was authorized by the Board in July 2017.

Demonstration Plant Direct Potable Reuse (DPR) Modifications

Phase 1 operation and testing of Tertiary MBR started October 2019 and will continue through the end of 2020. Phase 2 operation and testing of Secondary MBR will begin in 2021 and will continue through 2022. To implement Direct Potable Reuse (DPR) into the RRWP, additional testing will be needed to establish new design criteria and to confirm treatment costs for a full-scale facility with the ability to treat recycled water for DPR. To perform this testing, additional treatment processes be required to be constructed at the existing APC. The additional testing will also support the program's outreach effort and provide information for the regulators on the viability of using membrane bioreactors for DPR.

Right of Way and Infrastructure Protection Program

Fiscal Year 2020/21 Estimate: \$2.4 million

Year 2021/22 Estimate: \$5.7 million

Program Information: *The Right of Way Infrastructure Protection Program (RWIPP) is comprised of projects to refurbish or upgrade above-ground facilities and right-of-way along Metropolitan’s pipelines in order to address access limitations, erosion-related issues, and security needs.*

Accomplishments for FY 2018/19 and FY 2019/20

- Major milestones achieved during the last biennium:
 - One project completed design:
 - Orange County Region - Stage 1 Improvements
 - Two projects completed preliminary design
 - Western San Bernardino Region Improvements
 - Orange County Region - Stages 1 & 2 Improvements

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|---|------------------------|----------------------|-------------------------------|
| Programmatic Environmental Documentation for the Western San Bernardino County Operating Region | \$ 2,600,000 | 2022 | Complete PEIR |
| Right of Way Infrastructure Protection Program - Orange County Operating Region | \$ 23,000,000 | 2025 | Complete Stage 1 construction |

Los Angeles Region Project Group

Right of Way & Infrastructure Protection - Los Angeles County Region

This project identifies and addresses right-of-way and security issues; identifies and executes needed improvements within the Los Angeles County Operating Region; prepares environmental documentation; acquires regional programmatic environmental permits; and monitors and reports to permitting agencies for ten years following completion of construction.

Orange County Region Project Group

Right of Way & Infrastructure Protection - Orange County Region

This project identifies and addresses right-of-way and security issues; identifies and executes needed improvements within the Orange County Operating Region; prepares environmental documentation; acquires regional programmatic environmental permits; and monitors and reports to permitting agencies for ten years following completion of construction.

Riverside/San Diego Region Project Group

Right of Way & Infrastructure Protection Program - Riverside and San Diego County Region

This project identifies and addresses right-of-way and security issues; identifies and executes needed improvements within the Riverside and San Diego County Operating Region; prepares environmental documentation; acquires regional programmatic environmental permits; and monitors and reports to permitting agencies for ten years following completion of construction.

Western San Bernardino Region Project Group

Right of Way & Infrastructure Protection Program - Western San Bernardino County Region

This project identifies and addresses right-of-way and security issues; identifies and executes needed improvements within the Western San Bernardino County Operating Region; prepares environmental documentation; acquires regional programmatic environmental permits; and monitors and reports to permitting agencies for ten years following completion of construction.

ROWIPP - Other Project Group

Right of Way & Infrastructure Protection Program - Property Acquisition and Regulatory Compliance

The scope of this project includes preparing and executing agreements with environmental regulatory agencies to assist in development; review and approval of environmental documentation; and issuance of applicable permits. These activities were authorized by the Board in April 2013.

This project will also include procurement of right-of-way or property to support access or needed repairs to pipelines and facilities; provide surveying and mapping services needed to identify right-of-way issues, prepare pre-appraisal documentation for acquisition of easements and right-of-way; conduct field surveys and topographic mapping; and ordering and reviewing title reports and supporting recorded documents. Activities include developing conceptual solutions, layout drawings, and final design criteria of needed improvements; preparing pre-appraisal documentation for acquisition of easements and right-of-way; conducting field surveys and topographic mapping; ordering and reviewing title reports and supporting recorded documents; initiating consultations with permitting agencies for required permits; preparing legal descriptions, exhibit maps, and other exhibits as needed for acquisition planning, permits, and real estate negotiations; completing right-of-way mapping and preparing Record of Survey maps to be filed with the county of origin; and setting monuments and witness posts.

Right of Way Infrastructure Protection Program - Colorado River Aqueduct

The Right of Way Infrastructure Protection Program (RWIPP) identifies, prioritizes, and executes site improvements throughout Metropolitan's service area. This project encompasses site improvements along the CRA and addresses access limitations, erosion-related improvement work, and security needs along the surface of the CRA's rights-of-way. Under the initial stage of the program, site improvements needed along the CRA will be identified, a comprehensive regional compliance and permitting program will be developed, and a programmatic environmental document will be prepared to secure environmental approval for multiple projects along the CRA rather than pursuing individual approvals on a project-by-project basis. This project will add the CRA to the RWIPP, which already includes the Orange County, Western San Bernardino, Riverside/San Diego, and Los Angeles operating regions.

System Flexibility/Supply Reliability Program

Fiscal Year 2020/21 Estimate: \$13.6 million

Fiscal Year 2021/22 Estimate: \$24.8 million

Program Information: *The System Flexibility/Supply Reliability Program is comprised of projects to increase the capacity and flexibility of Metropolitan’s water supply and delivery infrastructure to meet service demands.*

Accomplishments for FY 2018/19 and FY 2019/20

- Major milestones achieved during the last biennium:
 - One project completed construction:
 - Inland Feeder and Lakeview Pipeline Intertie - Valve Installation
 - One project completed design
 - Greg Avenue Pump Station Rehabilitation

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|---|------------------------|----------------------|--|
| Greg Avenue Pump Station Rehabilitation | \$ 32,000,000 | 2021 | Complete construction |
| Perris Valley Pipeline - Tunnels | \$ 65,000,000 | 2022 | Complete design and begin construction |

System Flexibility/ Supply Reliability - All Project Group

Delta Properties Infrastructure Improvements

Recent legislation (SB 88) requires monitoring and reporting of certain diversions within the Delta. Metropolitan’s Delta properties will need to comply. This project will investigate existing diversion points, identify permanent meter locations, coordinate with the Delta Watermaster, and install approximately 40 meters.

Greg Avenue PCS - Pump Modifications and New Control Building

The Greg Avenue Pump Station was originally constructed in the early 1960s to pump treated CRA water from the Weymouth plant into the West Valley area, and was then modified in the mid-1970s to include hydroelectric power generation capability to generate up to one megawatt by replacing one of the pumps with a pump/turbine. Since that time, the remaining original pump at this facility was operated intermittently during operational tests or when the Jensen plant was out of service. Over the past year, cracks have developed on the pump’s mounting brackets and at the support gussets. These pumps need to be replaced, the inlet and outlet pipe manifolds need to be reconfigured, the electrical and control systems need upgrading, and the surge tanks need to be replaced.

In addition to rehabilitating the mechanical, electrical, and control components of the pump station to improve reliability of the facility, this project includes construction of a new control building is proposed to replace the existing control building that houses mechanical and electrical equipment, and maintenance shop, which is seismically vulnerable. A construction contract was authorized by the Board in February 2019.

Lake Perris Seepage Water Conveyance Pipeline

Metropolitan and DWR have partnered to design and construct facilities to capture and convey Lake Perris leakage water to the CRA. DWR will design and construct a seepage collection wellfield near the foot of the Lake Perris Dam, and this project will design and construct a conveyance pipeline extending from the DWR wellfield to the CRA. Metropolitan's Board authorized preliminary design in April 2017.

Perris Control Facility & Hydroelectric Plant Upgrades

The Lake Perris Control Facility (LPCF) includes a pressure control structure, pump back system with four electric and two diesel pumps, and a hydroelectric plant. This facility controls flows from delivered from the Department of Water Resources Silverwood Reservoir located at Devil's Canyon, and Lake Perris to the Lakeview Pipeline. To improve Mills Plant reliability, water from Diamond Valley Lake and Inland Feeder can be delivered to Mills Plant by gravity flow but would require some modifications to the Lake Perris Control Facility's pressure control structure and HEP. The project will upgrade the LPCF systems to handle the maximum head of 1934 feet (from the Inland Feeder) by upgrading components of the pressure control structure and replacement of the hydroelectric plant.

Perris Valley Pipeline - Tunnels

The objective of the Perris Valley Pipeline is to supply additional water deliveries from Mills plant to EMWD and WMWD per their request. Construction of this 6.5-mile-long pipeline was initiated in 2007, to be implemented under two contracts: the North Reach consisting of 2.7 miles of pipeline and two service connections (WR-24 and EM-23), and the South Reach consisting of 3.8 miles of pipeline and two additional service connections (WR-35 and EM-24). In 2009, the North Reach was completed and placed in service. In 2010, 3.3 miles of the South Reach were completed. The Perris Valley Pipeline Interstate 215 Crossing project will complete a remaining half-mile-long section approximately midway along the South Reach and enable placing the South Reach in service. This project consists of construction of an approximate 1,700-foot-long tunnel and tie-ins to the previously constructed reaches. Design of this portion of the Perris Valley Pipeline was authorized by the Board in 2006.

System Reliability Program

Fiscal Year 2020/21 Estimate: \$44.9 million

Fiscal Year 2021/22 Estimate: \$52.5 million

Program Information: *The System Reliability Program is comprised of projects to improve or modify facilities located throughout Metropolitan's service area in order to utilize new processes and/or technologies and improve facility safety and overall reliability. These include projects related to Metropolitan's Supervisory Control and Data Acquisition (SCADA) system and other Information Technology projects.*

Accomplishments for FY 2018/19 and FY 2019/20

New projects initiated during the last biennium:

- Automatic Meter Reading Remote Terminal Unit Replacements and Radio Modem Upgrade
- Asset Monitoring and Management System
- Data Center Modernization Upgrade Phase II
- Desert Microwave Tower Site Upgrades
- GIS Infrastructure Upgrade
- Fuel Management System Upgrade
- Headquarters Building Automation System Upgrades
- Headquarters Cafeteria Refrigeration System Upgrades
- HQ Fire Sprinkler Level P1 Replacement
- Maximo Mobile Computing Upgrade
- MWD HQ Boardroom Technology Upgrade
- New La Verne Warehouse
- Security Operations Center

Major milestones achieved during the last biennium:

- MWD HQ Boardroom Technology Upgrade - Started final design
- GIS Infrastructure Upgrade - Completed deployment
- Union Station Headquarters Building Improvements - Completed design
- 11 District Employee Houses at the Eagle, Gene, Iron, and Hinds Pumping Plants - Completed renovations
- Headquarters Security Upgrade - Completed Stage 2 final design
- SCADA RTU CPU and Operating System Upgrade - Completed deployment

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|---|------------------------|----------------------|--|
| Water Quality Monitoring & Planning System | \$ 3,600,000 | 2023 | Begin design |
| Control System Upgrade | \$ 4,465,000 | 2020 | Complete Phases 1 & 2 |
| La Verne Shops Improvements - Equipment Installation and Completion | \$ 17,000,000 | 2022 | Complete construction |
| Wadsworth Pumping Plant Control & Protection | \$ 22,540,000 | 2021 | Complete deployment |
| Business Systems Disaster Recovery Upgrade | \$ 2,800,000 | 2021 | Complete deployment |
| IT Network Reliability Upgrades | \$ 7,200,000 | 2021 | Complete deployment |
| Maximo Upgrade | \$ 840,000 | 2020 | Complete deployment |
| Maximo Mobile Upgrade | \$ 550,000 | 2021 | Complete deployment |
| Data Center Modernization Upgrade | \$ 8,350,000 | 2021 | Complete Phase 2 design |
| Asset Monitoring and Management System | \$ 500,000 | 2020 | Complete deployment |
| Desert Microwave Tower Site Upgrades | \$ 3,910,000 | 2021 | Complete design and begin construction |
| Security Operation Center | \$ 8,600,000 | 2021 | Complete construction |
| WiFi Upgrade | \$ 3,600,000 | 2021 | Complete deployment at Headquarters |
| MWD Boardroom Technology Upgrade | \$ 7,800,000 | 2020 | Complete design and begin construction |
| Water Ordering and Energy Scheduling System | \$ 450,000 | 2022 | Complete deployment |
| Union Station Headquarters Improvements | \$ 65,000,000 | 2022 | Complete construction |

IT/SCADA - Infrastructure Project Group

AMR System RTUs and Radio Modem Upgrade Project

The Automatic Meter Reading (AMR) system is a critical component for transmitting meter information to allow for billing of member agency water deliveries and analysis of official meter instrumentation. The current system was mostly installed between 2008 and 2009. Portions of the AMR System must be updated because of equipment obsolescence and diminishing vendor support, as they are approaching their end of life. This project is planned to be completed in two phases. The first phase will consist of replacement of the radio modems and radio master stations, including procurement, configuration, installation, project management, and internal labor to support implementation. The second phase will consist of replacement of the AMR RTUs. It is anticipated that the Control System Upgrade Conceptual Design project (Phase 2 of the Control System Upgrade) will recommend that the technology used in the AMR system be made consistent with the technology used in the SCADA (Supervisory Control and Data Acquisition) system. Thus, the second phase (AMR RTUs) will be started after the Control System Upgrade Phase 3 (procurement) is completed. The second phase of the AMR project will consist of replacement of RTUs, operator interface terminals, digital displays, configuration laptops, battery chargers, networking equipment, along with associated configuration, installation, and implementation.

Applications-Servers Upgrade from Old Windows OS

A significant number of Metropolitan's systems, including a number of critical enterprise-level business and water applications, are currently running on outdated Microsoft Windows platforms (Windows 2003, 2007, and 2008). These platforms are either already no longer being supported or will shortly cease to be supported by the Microsoft Corporation. Microsoft's support includes software updates and security-related patches to fix technical issues and mitigate potential new security risks. Losing these software and security updates will increase cyber-security risks for the unsupported platforms. This project will upgrade all older application environments to Windows 2016. Phase 1 of the project will identify and document required changes, and will group applications into four deployment waves. Phase 2 will deploy the upgrades on each of the four groups identified in Phase 1.

Arc Flash Software Model Development

An arc flash is the light and heat produced from an electric arc supplied with enough electrical energy to cause substantial damage, harm, fire, or injury. Arc flash risk analysis is required per National Fire Protection Association (NFPA), National Electrical Code (NEC), and Occupational Safety and Health Administration (OSHA) standards. Metropolitan currently uses a generic tabular approach to quantify the arc flash hazard; this approach is no longer in compliance with the latest NFPA 70E standards. Comprehensive modeling that considers the effects of the surrounding equipment and accurately identifies the arc flash hazards is now required. This project will develop software models for Metropolitan facilities that are susceptible to arc flash hazards. The models will provide complete and consistent information that will identify equipment improvements to improve safety and to meet regulatory compliance.

Asset Monitoring and Management System

This project will establish the foundation for leveraging data already maintained by Metropolitan (under multiple different software platforms) into a common framework in order to efficiently conduct future infrastructure reliability projects and assessments across Metropolitan. This project is needed to support a common condition monitoring framework across Engineering Services (ESG) and Water System Operations (WSO) groups, as well as to support condition-based maintenance initiatives as part of General Manager's initiatives and WSO's business plan.

This project includes building software tools to access and aggregate ESG, WSO, and other asset-related data, such as data from finance, to facilitate infrastructure reliability investigations on one class of assets (revenue meters). Eventually, the software tools developed as a part of this project will be used for future condition assessments in ESG and WSO.

Business Systems Disaster Recovery Upgrade

Upgrade the Disaster Recovery Facility with additional servers, storage, Oracle database licenses, and needed equipment to meet, or exceed, the 2017 Business Impact Analysis (BIA) business system recovery requirements. Upgrade compatible DBMS applications for a high availability 24x7 infrastructure for identified mission critical applications. The Board authorized the upgrades in December 2017.

Control System Upgrade

Metropolitan's control system spans the CRA, Metropolitan's five water treatment plants, and the entire conveyance and distribution system. The system-wide control system upgrade is planned to be implemented in a phased approach through the following projects to upgrade hardware, software, and a communications network. Currently, the phases are planned to consist of the following projects:

- Phase 1 - Preliminary investigations
- Phase 2 - Conceptual design of the new control system
- Phase 3 - Selection and demonstration testing
- Phase 4 - Final Design of Mills Area
- Phase 5 - Implementation Mills Area
- Phase 6 - Final Design of Skinner Area
- Phase 7 and later - Continued final design and installation/construction of the new control system in multiple staged contracts

Data Center Backup Infrastructure Upgrade

Critical business and water applications rely on backup processes to restore the applications as soon as possible in an emergency. As Metropolitan's data volume progressively increases, so does the duration of the processes to backup, restore, and recover operations. Metropolitan's current backup software was deployed 15 years ago and uses magnetic tape as the storage medium. This project will replace the backup infrastructure with newer and faster technology and will redesign the backup/restore processes and procedures using the latest components of the backup software.

Data Center Modernization Upgrade

The purpose of this project is to assess, redesign, and upgrade the MWD Headquarters and Lake Mathews data centers to provide sufficient computing power and modernize the data centers to meet current and future capacity and reliability needs. This project will conduct a detail assessment, final design, and funding estimate to relocate the HQ and Lake Mathews data centers to improve their long-term reliability from Tier-1 to Tier-3.

Desert Microwave Tower Site Upgrades

This two-phase project will improve the reliability, performance, and capacity to Metropolitan's microwave radio wide-area-networks (WANs). Phase 1 involves \$3.91M out of the \$12M total project budget to address the most critical components that need to be replaced or upgraded in the Desert Region microwave tower sites. Phase 1 will upgrade the most critical Desert sites and Phase 2 will upgrade LA Basin sites, plus remaining Desert sites. Lessons learned from the Diamond Valley Lake (DVL) microwave proof-of-concept will be used in this project. The microwave network uses wireless transmission over radio frequency energy in the 6-18 Giga Hertz range.

Engineering Information System Upgrade

The goal of this project is to upgrade ProjectWise (Engineering's Information System) to the latest version, install and configure additional ProjectWise modules, and integrate ProjectWise with other Metropolitan systems such as Geographic Information System (GIS), Outlook, SharePoint, and Deliverables Management to implement additional functionalities in ProjectWise. The intent is to streamline the workflow in Engineering design and improve access to information and documents in ProjectWise.

Enterprise Data Analytics

Building an Enterprise Data Warehouse & Analytics to answer both operational and strategic questions facing Metropolitan. The Data Warehouse will be built of individual data marts modeling a specific business area providing integrated reporting through Extract/Transform/Load (ETL) procedures and common dimensions. This Enterprise Data Warehouse will contain both business and operational data. It will be designed to combine these two data types in order to provide a financial dimension to operational data. By linking data like EBS (Financial), SCADA, GIS and Water Supply/Demand, Staff can model different scenarios to answer questions and to discover trends and anomalies previously not visible due to isolated reporting.

Enterprise GIS Disaster Recovery

This project will add the Enterprise GIS (EGIS) infrastructure to the Metropolitan IT Disaster Recovery Facility (DRF) in Riverside County. This includes the purchase, installation, and configuration of new hardware and software to meet Business Impact Analysis (BIA) study requirements for the EGIS infrastructure. The current recovery time for EGIS infrastructure is estimated at greater than a week. The BIA Recovery Time Objective (RTO) for the EGIS infrastructure is less than 72 hours, meaning that the EGIS infrastructure should be functional within 72 hours after an outage. This project will reduce the RTO for the EGIS infrastructure from 72 hours to 1 hour, so that EGIS data could potentially be used to assist in emergency operations.

Fuel Management System Upgrade

This project's objective is to upgrade the ten-year-old Fuel Management System (FMS), which is no longer supported by manufacturer. The FMS provides essential management controls over fuel inventories, dispensing, and security. It identifies and authorizes the dispensing of fuel and records fuel transactions and fuel tank data in a centralized database. This project will replace the necessary hardware and software to upgrade the FMS and to integrate it with Metropolitan's Computerized Maintenance Management System (CMMS), Maximo.

WiFi Upgrade

This WiFi Upgrade project will improve the reliability, performance, and capacity to Metropolitan's wireless access point (WAP) local-area-networks (LANs) at Headquarters and various field facilities. It will also provide a secure, reliable and robust WiFi System to support increasing business demands and reliance on Metropolitan's wireless infrastructure. The scope for this project includes (1) migration and implementation design plan, (2) removal of obsolete access points and controllers, (3) installation of cable in building ceiling for access points, (4) installation of new access points, and (5) configuration and installation of new controllers.

Hydraulic Modeling Analysis Toolkit and Water Quality Calibration

Metropolitan's Engineering Services Group completed development of a system-wide hydraulic model in January 2017 after a multi-year development effort. Even while model development was still underway, many uses for the hydraulic model were identified. This project includes developing tools to support hydraulic model analysis to increase efficiency and enhance productivity while using the hydraulic model for analysis. The project also includes development and calibration of water quality modeling capabilities.

Information Technology Service Management System

Metropolitan's Information Technology Group (ITG) currently uses several different systems for managing Information Technology incidents (e.g., a computer not turning on) and work requests (e.g., new software needing to be installed). While this approach works well in meeting each team's specific needs, one of the major disadvantages is that gathering metrics for management is a tedious process involving coordination with multiple teams, learning multiple software packages, and manual correlation and data gathering. This project will implement a service management system to track and manage service requests, incidents, change requests, IT asset management, and other related functions. As an added benefit, this will allow the expedited future implementation of self-service capabilities for several of the more common ITG service requests (e.g., automatic software installs for commonly used software packages) and provide future integration capability with various monitoring tools currently in use.

Information Technology System - Communication Infrastructure Reliability Upgrade

This project addresses the need to replace Metropolitan's Siemens/Rolm 9751PBX-based telephone system. The current telephone switches are over 18 years old and are at the end of service life. The scope of this project is to develop a request for proposals, select the VoIP vendor, complete the technical design, work side-by-side with the telephone technicians while installing the new equipment, test the new system, and perform project management; a professional services agreement for consulting services to design and build the new telephone system; upgraded equipment and software for the new system and related IT unified communications components; training and incidental costs. The Board approved this project in February 2008.

IT Network Reliability Upgrades

Metropolitan's communication network hardware is aging, which has led to increased maintenance. Based on the rise in failure rates of older equipment, staff has determined that existing network hardware and associated network room support systems need to be upgraded to support ongoing projects, maintain reliability, and meet future needs. The Board authorized final design of electrical, cooling, and backup power system upgrades for network rooms located on each floor of Metropolitan's Headquarters Building. It also authorized preliminary design and field assessments of network equipment. The Board authorized a contract to upgrade the network rooms at Headquarters in August 2015.

Lake Mathews IT Disaster Recovery Facility Upgrades

The Lake Mathews DRF was expanded as part of the Business Systems Data Recovery project funded by the Board in April 2004. The original DRF structure was a communications room that was not designed to be an IT data center. The scope includes equipping the IT Lake Mathews Disaster Recovery Facility (DRF) with needed data center environmental system upgrades such as Air Conditioning (HVAC), uninterruptible electrical power supplies (UPS), fire suppression system, emergency generator, and remote monitoring capabilities. Also, seismic upgrades will be conducted due to recently identified seismic deficiencies.

Maximo Mobile Upgrade

The goal of this project is to replace existing mobile devices used in WSO with latest tablet technology and deploy additional devices to Engineering. The project will enable the use of capabilities of the existing mobile software system that are not available on the existing hardware devices.

The project includes an initial pilot evaluation with a purchase of 30 units to evaluate different models and test features. The overall goal will be to purchase 290 devices following the completion of the pilot evaluation. The new devices will eliminate or reduce the need for desktop computers at field sites and vastly increase the functionality of the existing Maximo mobile devices.

Maximo Upgrade

This project will upgrade the Maximo system, Metropolitan's enterprise-wide asset management program that is used for planning, scheduling, and reporting required maintenance of equipment deployed throughout the treatment plants and conveyance & distribution system. This project includes software upgrades and new hardware to accommodate this upgrade. This project was authorized by the Board in July 2017.

MWD Headquarters Boardroom Technology Upgrade

The existing equipment in the board and committee rooms is over nine years old and several components are reaching the end of useful life. The Board of Directors and external organizations use the board and committee rooms on a regular basis and the technology supporting these meetings must be reliable and the sound and video must be of high quality. This project will upgrade audio visual (AV) and information technology-related equipment in the main Board room and committee rooms in Metropolitan's headquarters building at Union Station.

Security Operations Center

This is the second phase of the Cyber Security Upgrades project. The first phase concluded that additional cyber projects were needed to mitigate evolving threats. This phase will assess and remediate exposures and cyber security threats throughout Metropolitan with special emphasis on the business and SCADA networks. Maintaining a secure computing infrastructure requires application of ongoing cyber countermeasures to protect against new cyber threats that are identified on a continual basis. The scope of this project includes engaging a security consultant to perform an independent assessment of MWD's IT infrastructure and environment to identify potential vulnerabilities and make recommendations for strengthening our cyber security.

Standby Generator Relocation at Six WAN Sites

Metropolitan's Wide Area Network (WAN) provides a critical communication and data link between facilities across the distribution system. The Standby generators at six WAN sites must be relocated for consistency with the current fire codes and to enhance safety. These generators are needed to provide backup power in the event of loss of primary power. The planned improvements will reduce the risk of damage to communication equipment and the buildings in the event of a fuel leak. Metropolitan forces will relocate the standby generators at six WAN sites to reduce the risk of fire damage to Metropolitan's communication systems. The standby generators will be moved to new locations in separate outdoor enclosures, consistent with current fire codes. Relocation was authorized by the Board in August 2016. The project is currently in progress.

Two-Way Radio System Upgrade

Metropolitan's current Two-Way Radio system is approaching the end of its service life, and both vendor and after-market support will cease in the next few years. The existing Two-Way Radio system is Metropolitan's essential communication system for public/employee safety, and for communications when Metropolitan performs tasks involving member agencies. This project will upgrade specific components of the Two-Way Radio system, reusing the majority of the infrastructure; replace some unsupported radios; and will provide improvements to address poor reception at some locations. The upgraded Two-Way Radio system will include features anticipated to provide higher capacity, higher levels of cybersecurity, additional management and monitoring features, and multi-level resiliency.

Water Ordering & Energy Scheduling System

The Water Ordering and Energy Scheduling System will have the capability of meeting several OCC scheduling needs in a single system. The water flow scheduler portion of the project consists of the development of a software tool allowing member agencies to efficiently submit flow changes and schedule requests via a secure web page. The current process requires that an OCC system operator manually record flow change requests via telephone and take handwritten notes in order to then make control adjustments to hydraulically accommodate the flow requests. Providing a self-service portal for member agencies to submit flow change requests online will allow system operators to focus on the monitoring and controlling of the distribution and conveyance system, reducing interruptions and more effectively managing member agency flow change requests. Additionally, the Water Ordering and Energy Scheduling System will include the capability of forwarding power production schedules directly to the PUC as required for hydroelectric plant operation. A unified solution will reduce the number of separate applications Metropolitan currently maintains with the added benefit of incorporating current and secure best practices. Furthermore, developing a single system under a combined project will be easier to maintain and operate, allowing for more simplified upgrades in the future.

Water Quality Monitoring and Planning System (WQ MaPS)

Existing distribution system online water quality analyzers, installed in 2002-03, are obsolete and in need of replacement. Instrumentation measures total chlorine, conductivity, pH, turbidity, ultraviolet absorption, and total ammonia. Data from analyzers is monitored by the Operations Control Center through the SCADA system and by Water Quality through a contaminant warning system. The WQ MaPS project will enable Metropolitan's continued use of online data to quickly identify water quality anomalies resulting from normal operations or emergency situations to minimize risk of water quality issues and potential compliance violations. This project will implement the action items identified in the WQ MaPS action plan to improve data reliability and increase customer access to data. This project will upgrade obsolete water quality analyzers at 21 locations and install analyzers at 14 additional locations, incorporate output from the existing water quality event detection system into an innovative GIS dashboard, integrate output from the ESG's hydraulic model into the GIS dashboard, and provide a self-service portal for internal and external customers to access approved water quality data.

Water Quality Laboratory Instrumentation Modernization and Data Acquisition Automation

Metropolitan's La Verne Water Quality Laboratory houses a significant number of analytical and water sampling instruments that support many of Metropolitan's business functions, including demonstrating regulatory compliance with drinking water standards and water treatment optimization. Historically, Metropolitan has approached replacement of obsolete instrumentation through individual purchases. This strategy has limited the rate of upgrades or replacement. In addition, many of the laboratory's instruments include vendor-provided dedicated computer workstations, loaded with software that is sometimes maintained by the vendor, and sometimes by Metropolitan's IT staff. This has resulted in cybersecurity vulnerability, as well as multiple non-standard computer images, operating systems, and software versions. Finally, the diversity of instrumentation in the laboratory has made it difficult to acquire data from the various instrumentation systems. This project will upgrade laboratory instrumentation to accommodate cybersecurity issues, prevent obsolescence of laboratory instrumentation, and allow integration of data acquisition efforts.

Operations Support Project Group

CRA Housing Improvement - Renovation of 9 Houses

Metropolitan owns and rents 89 houses throughout the five CRA pumping plants to employees involved in operation and maintenance of the CRA. Due to the remoteness of the CRA facilities, on-site housing is provided to staff to ensure an appropriate response time in the event of an emergency that could jeopardize aqueduct flows, damage equipment, or present a safety risk to employees or the general public. The aging houses are deteriorated and in need of repairs and renovations. The planned renovations for the 89 desert houses may include: upgrading electrical and plumbing systems; installing new doors and windows; installing new cabinetry and countertops for kitchens and bathrooms; replacing roofs and HVAC units; repairing structural components such as roof joists and floor foundations; replacing and upgrading flooring; interior and exterior painting; and abatement of hazardous materials, as needed. The extent of renovations will depend on the condition and needs of each house. Renovation of up to 89 houses was authorized by the Board in May 2017. This project will complete renovation of a total of 20 houses out of the 89 houses as originally planned. The construction of the eleven houses is completed and this project will be closed. The design and construction of the remaining nine houses will continue under this appropriation but with a new project number. The remaining 69 houses will be completed under Appropriation No. 15513.

CRA Housing Improvements - Renovation of Short-Term Accommodations at Eagle Mountain and Iron Mountain Pumping Plants

Eagle Mountain and Iron Mountain Pumping Plants have kitchens and guest lodges that are used by staff during shutdowns and construction projects, and during extended periods of condition assessments and design of rehabilitation work. These facilities will be used frequently over the next decade as the planned rehabilitation of the 45 main CRA pumps moves forward.

The kitchen at Iron Mountain Pumping Plant has been in service for decades and while still functioning, its equipment is deteriorated and obsolete. The kitchen at Eagle Mountain Pumping Plant does not currently meet San Bernardino County Health Services' requirements for large-scale food storage, refrigeration, or handling. As a result, it has been removed from service. The 10-room guest lodge at Eagle Mountain Pumping Plant and the 16-room guest lodge at Iron Mountain Pumping Plant have both deteriorated after more than 40 years of service and require frequent short-term repairs. The planned kitchen renovations include replacement and refurbishment of existing floor and wall coverings, shelving, plumbing, electrical components, sinks, ranges, freezers, and walk-in refrigerators. At the guest lodges, the needed improvements include electrical, plumbing, and HVAC improvements and roof replacement. Design was authorized by the Board in May 2017. Prior to beginning design, a study was conducted by a consultant in April 2018. Preliminary Assessment was initiated by a consultant in August 2019. Results from Preliminary Assessment propose a replacement alternative for Kitchens & Lodges.

Eagle Rock Security Project

The Eagle Rock Operations Control Center (OCC) was built in 1995 in the City of Pasadena. The OCC coordinates and controls Metropolitan's water conveyance and distribution system throughout its entire service area. As the main hub of this system, the OCC is pivotal for the management of water deliveries through Metropolitan facilities. The site currently consists of (1) a two-story building that houses the OCC, the Emergency Operations Center, and several staff offices, (2) a two-story older structure that holds the Business Incident Command Post, Security Water Center, several offices, and a Control Systems shop, and (3) several concrete structures used for transporting water. A vulnerability assessment of the OCC site was conducted in 2017. This assessment identified several security issues of concern as a result of trespassing onto the property. A security assessment identified the site's use by hikers in the area, site accessibility by individuals who have established homeless encampments in the area, and illegal dumping. Proposed site improvements include replacement of the main gate, additional security cameras, lighting fixtures, flood lights with motion detectors, signage, and other related security features.

Electrification of Fleet Vehicles & Expansion of Existing EV Charging Stations

Identifying new ways to reduce greenhouse gas (GHG) emissions and reduce Metropolitan's carbon footprint is essential to the development of Metropolitan's Climate Action Plan. This project will install electric vehicle (EV) infrastructure across the district to incorporate electric vehicles into Metropolitan's fleet, as well as expand existing EV infrastructure for passenger vehicles. This project would be implemented in phases, starting with a comprehensive study to determine project priorities, potential GHG reduction based on projected use, provide a cost analysis, and develop a roadmap for subsequent phases.

HVAC System Assessments & Upgrades - Field Facilities

Metropolitan's facilities include nearly 700 structures with over 2,000 pieces of heating, ventilation, and air conditioning (HVAC) equipment. Approximately 80% of the HVAC equipment used by Metropolitan supports process systems that are required to treat or distribute water, and for regulatory compliance. The majority of Metropolitan's HVAC equipment is over 30 years old, requiring more corrective maintenance to remain operational, and consuming more electricity than newer, more energy efficient units. This project consists of a five-year, phased replacement of outdated HVAC infrastructure with certified energy efficient equipment, and will address regulatory changes in EPA guidelines, which are phasing out the refrigerants currently used in most of MWD's HVAC systems. The project will also modernize HVAC controllers into a cohesive building automation network to allow Metropolitan staff to more efficiently respond to HVAC interruptions, more quickly troubleshoot problems, provide early detection of problems before catastrophic failures, and ensure optimal performance of the HVAC systems.

La Verne Shops Improvements

The La Verne Shops are located on the grounds of the F. E. Weymouth Water Treatment Plant and have been in service since 1941. The shops were expanded in the 1960s, and were expanded again in the 1980s to support a major rehabilitation of the pumps along the CRA.

A shop modernization program was started in 2002, and included building expansions and upgrades, and shop equipment replacement or refurbishment. Most of the shop equipment is 25 to 35 years old, with a few pieces close to 45 years old, and a 20-year-plan to replace and refurbish the shop equipment has been developed. The building expansions and upgrades included expanding the existing shop buildings, upgrading portions of the existing buildings, and replacing and refurbishing shop equipment. This project also focuses on design and procurement of shop equipment which will be installed under the Stage 4 Building completion contract. This equipment includes a hydraulic shear, hydraulic press brake, waterjet cutting system, and vertical milling. In January 2018, the Board awarded procurement contracts for three of these machines. Procurement of a vertical milling center will be the subject of a future board action. The Stage 4 building completion scope of work includes water line extensions, a new electrical circuit and unit power center, an air compressor and air lines, shop heaters, and safety enhancements including walkways and roof access ladders. In addition to the building work, the scope includes procurement and installation of a horizontal and vertical band saw, plasma cutter, and floor mill and blast booth refurbishment. The Board authorized design in December 2015.

Five additional pieces of shop equipment need to be replaced and refurbished to maintain Metropolitan's ability to respond to emergencies and perform planned maintenance. This is the final project to complete a 20-year shop modernization program. The following equipment has been identified for replacement or refurbishment: One medium and one large lathe to replace two existing lathes, one new medium sized floor mill to replace a non-functioning floor mill, a new large floor mill to work on Metropolitan's largest hydraulic machinery, like the pumps on the CRA system, and refurbishment of the large existing floor mill.

La Verne Field Engineering Building Replacement

This project provides a new Field Engineering Building to replace the existing one, which does not meet Metropolitan's current seismic building standards, and is limited in function due to HVAC deficiencies and work space constraints. The Field Engineering Building, located at Metropolitan's La Verne Facility, was designed and built over 50 years ago in accordance with building codes current at that time.

This project will include a detailed value engineering study to confirm the recommended approach to construct a new building in lieu of retrofits to the existing structure. This project will also include a comprehensive siting study to ensure that the proposed footprint of the new building does not interfere with the current and future requirements of Metropolitan's La Verne Facility. This project will enhance infrastructure safety, security, and resiliency.

Lake Mathews Wastewater System Replacement

The wastewater system at Lake Mathews has been in operation for nearly 80 years and is no longer reliable. Despite receiving regular maintenance, the system is exhibiting signs of failure including plumbing and septic tank backups, clogged leach fields, and slow-draining collection pipes. On-site treatment of the wastewater via septic tanks will be discontinued, and new collector lines will be connected to the local sewer system that was installed in the early 2000s. Western Municipal Water District has a nearby sewer main that includes a connection point specifically installed for Metropolitan's future use. This connection can accept wastewater by gravity from the entire on-site system. Staff recommends replacing the on-site wastewater system to reduce the risk of costly unplanned repairs and to maintain system reliability. The Board authorized design in May 2018.

Meter Accuracy and Hydraulic Testing Facility

Metropolitan had previously used its Yorba Linda Facility to evaluate and equipment, test operational concepts and qualify equipment. The water used for testing was obtained from the Santiago Lateral and discharged into the Santa Ana River. Environmental constraints on the discharge of water made the facility's use impractical, and the test facility was shutdown. This project constructs a new test facility at Etiwanda Reservoir in order to test new emerging technologies, emerging regulations related to metering, and to validate non-standard service connections. Specifically, a new facility would allow staff to test equipment such as valves, meters, coatings, and other treatment and distribution devices; conduct expedited test to maintain a pre-approved equipment list for low bid procurement; simulate problematic flow meter installations and low flow conditions; and test the accuracy of existing flow meter installations.

New La Verne Warehouse

The Central Stores Warehouse at La Verne is Metropolitan's main warehouse for storing materials, supplies and equipment used by field personnel to support Metropolitan's operations. A recently completed seismic evaluation found that the building may be damaged from a maximum credible earthquake. The cost to retrofit the building is cost prohibitive. In addition, the warehouse lacks the storage space necessary to house Metropolitan's materials, supplies and equipment. The warehouse also lacks equipment to handle large assets like the large diameter valves that are being procured for projects like the Prestressed Concrete Cylinder Pipe (PCCP) Rehabilitation Program. The new warehouse will support Metropolitan's PCCP Rehabilitation Program, existing operations and maintenance, and future infrastructure upgrades.

System-wide Paving & Roof Replacements

Similar to infrastructure throughout the Metropolitan, pavements and roofs deteriorate over time due to wear and tear from use, weathering and precipitation. The planned pavement and roofing rehabilitation projects will encompass water treatment plants, pumping plants, various maintenance facilities and access roads within Metropolitan's service areas. These projects will also improve the subgrade and drainage systems as required.

This project will allow various paving and roof replacements throughout Metropolitan's facilities to be authorized by the General Manager similar to the Minor Capital Projects Program. Establishing a project to fund a limited amount of paving and roof replacement on an annual basis will allow these needed replacement projects to proceed expeditiously.

Water Quality Laboratory Building Seismic & HVAC Upgrades

This project addresses seismic upgrades and other building improvements for the Water Quality Laboratory. The Water Quality Lab was constructed in accordance with the building codes at the time of construction and is treated as an essential facility. However, industry knowledge of earthquakes and seismic design has greatly improved over the years, leading to the development of more stringent, modern seismic codes for this type of facility. To minimize the risk of damage to the plant during a major earthquake, seismic upgrades are recommended. Also, new regulatory requirements associated with Quagga Mussels, per- and polyfluoroalkyl substances (PFAS), and other water quality concerns will be addressed.

In addition to the seismic upgrades, functional layout improvements such as laboratory and office space reconfiguration, lab equipment replacements, accessibility, HVAC improvements, roof repair and other related building improvements will also be included.

System Reliability - Other Project Group

Building Automation System Upgrades

The building automation system controls all lighting, carbon monoxide monitoring system, HVAC, and associated mechanical equipment in Metropolitan's Headquarters Building. The system is required to operate the building in an energy efficient manner, consistent with Title 24 energy efficiency standards. In the event of a building automation system failure, thermal control within the data center would be lost and garage exhaust fans within the parking garage would become inoperable, resulting in damage to critical facilities and unsafe conditions, respectively. The existing building automation system is obsolete and is no longer supported by the manufacturer.

This project will replace the existing building automation system with a new nonproprietary system and will support integration of the new fire and smoke control systems that will be installed under the Headquarters improvements project. In October 2019, the Board authorized an amendment to an engineering services agreement for design of this project.

Headquarters Improvements

Analysis has confirmed that the Headquarters Building does not meet current building code criteria for an Essential Facility. While the building remains safe to occupy, seismic strengthening to meet updated code levels is recommended in order for operations and business functions to continue following a major earthquake. This upgrade will increase the Headquarters Building's level of seismic performance and safety to that of an existing state-owned building and will reduce the risk of significant damage and resulting business interruption due to a major earthquake.

Construction of the seismic upgrades poses logistical challenges associated with the major retrofit of a high-rise building while the facility remains operational. During the anticipated three-year duration of construction, two to three floors of the high-rise tower will be vacated sequentially to allow a contractor to execute the repairs. Metropolitan staff will be relocated in stages to the five-story wing of the building.

Seismic upgrade work provides an opportunity to complete improvements to specific building systems in a cost-effective manner, while the floors are unoccupied and building finishes are removed. The Headquarters Building is over 20 years old, and some of its features need to be upgraded or replaced. These features include the fire/life safety systems including existing fire sprinkler piping at the parking garage, some of the kitchen equipment and ceiling/wall finishes, HVAC system equipment including cooling towers and air handler units, and restroom facilities on several floors. The Board awarded a construction contract in November 2018.

Headquarters Security Improvements

The comprehensive security upgrades for Metropolitan’s Union Station Headquarters have been prioritized and staged to minimize rework and impacts to operations. The Stage 1 work, currently in construction, enhances perimeter windows and doors by providing needed blast protection. Stage 2 improvements, currently in design, will provide security system upgrades inside the building with entry validation, surveillance and intrusion protection, and additional security features in the board room, executive dining lounge, and security control room. Stage 3 improvements will provide security system upgrades outside the building with bollards and gates.

Security System Upgrade

The electronic security system is the backbone of Metropolitan’s physical security system. Studies indicate that replacement of the 15-year-old system is not yet required; however, incremental upgrades are needed to extend the life of the system. Work includes hardware and software upgrades to network controllers, computer servers, card readers, and the video management system. Design and installation was authorized by the Board in May 2017.

Wadsworth/DVL Control & Protection System Upgrade

This project is the final phase of the Wadsworth Pumping Plant/DVL control system upgrade and includes replacement of the entire Diamond Valley Lake (DVL) control and communications systems, the protection relay system, UPS, vibration monitoring system, and pump/turbine drive controls. This phase of the project was authorized by the Board in April 2017.

Treatment Plant Reliability Program

Fiscal Year 2020/21 Estimate: \$48.6 million

Fiscal Year 2021/22 Estimate: \$27.6 million

Program Information: *The Treatment Plant Reliability Program is comprised of projects to replace or refurbish facilities and components of Metropolitan's five water treatment plants in order to continue to reliably meet treated water demands.*

Accomplishments for FY 2018/19 and FY 2019/20

Diemer Plant

New Projects Initiated Last Period:

- Diemer Filter Valves Actuator Refurbishment
- Diemer Ozone Generator Open Loop Cooling Water System Improvements
- Diemer Slope Erosion Control Improvements

Major Milestones Achieved Last Period:

- Diemer Basin Rehabilitation - Started construction of the west basins
- Diemer Filter Outlet Conduit Seismic Upgrades - Completed construction
- Diemer Administration Building Seismic Upgrades - Completed construction
- Diemer Filter Building Seismic Upgrades - Started construction of seismic upgrades for the west filter building
- Diemer Filter Valve Replacement - Completed procurement of the actuators and started construction of valve replacement for the west filters
- Diemer Water Sampling System Improvements - Started construction
- Diemer Ozone Generator Open Loop Cooling Water System Improvements - Started construction

Jensen Plant

New Projects Initiated Last Period:

- Jensen Ozone PSU and Critical Component Upgrades
- Jensen Site Security Upgrades

Major Milestones Achieved Last Period:

- Jensen Module No. 2 & 3 Traveling Bridge and Basin Rehabilitation - Completed preliminary design of traveling bridges
- Jensen Plant Electrical Upgrades
 - Stage 1 - Completed construction
 - Stage 2 - Completed design and started construction
- Jensen Modules 2 and 3 Flocculator Rehabilitation - Completed design and started construction
- Jensen Fluoride Tank Replacement - Completed construction
- Jensen Filter Backwash Biological Control System - Completed construction
- Jensen Inlet Water Quality Instrumentation Upgrades - Completed construction
- Jensen Ozone System PLC Control & Communication Equipment Upgrade - Completed construction
- Jensen Ozone PSU and Critical Component Upgrades - Started procurement
- Jensen Site Security Upgrade - Completed preliminary design

Mills Plant

New Projects Initiated Last Period:

- No projects were initiated during the last biennium.

Major Milestones Achieved Last Period:

- Mills Electrical Upgrades - Started construction of Stage 1
- Mills Modules 3 & 4 Flash Mix Chemical Containment Upgrades - Completed design and started construction
- Mills Plant Perimeter Security and Erosion Control Improvements - Started design

Skinner Plant

New Projects Initiated Last Period:

- Skinner Module 7 Filter Inlet Valve Gearbox Replacement
- Skinner Finished Water Reservoir Slide Gate Rehabilitation
- Skinner Ozone Generator PLC Control & Communication Equipment Upgrade

Major Milestones Achieved Last Period:

- Skinner Plant - Replacement of Plant 1 Filter Gate Stems and Nuts - Completed construction

Weymouth Plant

New Projects Initiated Last Period:

- Weymouth Hazardous Waste Staging and Containment

Major Milestones Achieved Last Period:

- Weymouth Washwater Tank Seismic Upgrades - Completed construction of the west tank
- Weymouth Basins 5-8 and Inlet Channel Refurbishment - Completed preliminary design
- Weymouth Water Quality Instrumentation Improvements - Started construction
- Weymouth Hazardous Waste Staging and Containment - Completed preliminary design

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|---|------------------------|----------------------|---|
| Diemer Basin Rehabilitation | \$ 63,500,000 | 2021 | Complete construction of the west basins |
| Diemer Filter Building Seismic Upgrades | \$ 32,500,000 | 2021 | Complete construction of west filter building |
| Diemer Filter Valve Replacement | \$ 13,400,000 | 2021 | Complete construction of west filters |
| Jensen Control Room HVAC | \$ 600,000 | 2021 | Complete design |
| Jensen Modules 2 and 3 Flocculator Rehabilitation | \$ 7,907,000 | 2021 | Complete construction |
| Jensen Ozone PSU and Critical Component Upgrade | \$ 3,590,000 | 2023 | Begin construction |
| Jensen Plant Electrical Upgrades | \$ 69,616,000 | 2023 | Complete Stage 2 construction |
| Jensen Site Security Upgrade | \$ 1,800,000 | 2022 | Complete design |
| Jensen Chemical Feed Improvements | \$ 800,000 | 2021 | Complete design and construction |

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|--|-------------------------------|-----------------------------|--|
| Mills Fluorosilicic Acid Tank Replacement | \$ 1,600,000 | 2020 | Complete design and start construction of sulfuric acid tanks rehabilitation |
| Mills Modules 3 & 4 Flash Mix Chemical Containment Upgrades | \$ 1,750,000 | 2020 | Complete construction |
| Mills Plant Electrical Upgrades | \$ 19,700,000 | 2023 | Complete design of Stage 2 |
| Weymouth Administration and Control Buildings Seismic Upgrades | \$ 13,838,000 | 2024 | Complete design |
| Weymouth Basin 5-8 and Inlet Channel Refurbishment | \$ 48,512,000 | 2023 | Complete design |
| Weymouth Chlorine System Upgrades | \$ 9,237,000 | 2020 | Complete construction |
| Weymouth Filter Valve Replacement | \$ 24,500,000 | 2025 | Complete design of Filter Bldg. No. 2 |
| Weymouth Hazardous Waste Staging and Containment | \$ 812,000 | 2022 | Complete design and construction |
| Weymouth Water Quality Instrumentation Improvements | \$ 2,538,000 | 2021 | Complete construction |

Diemer Project Group

Diemer Administration Building HVAC Replacement

The existing HVAC system in the Diemer plant's Administration Building consists of two 20-ton, chilled and hot water coiled air-handling units, which maintain multi-zone work-space environments on both floors. The 55-year-old units are beyond their expected operating life and have caused issues with regular maintenance activities. This project will replace the existing HVAC units with new energy efficient units and upgrade the temperature control system for the building. Seismic anchorage of the equipment will be incorporated to meet the current building code.

Diemer AMP Gate Replacement

One of the components of the Diemer plant's Finished Water Reservoir (FWR) is a 14-ft by 20-ft outlet roller gate, intended to throttle the flow or isolate the reservoir from the downstream Allen-McColloch Pipeline (AMP). This gate recently failed due to previously undetected corrosion and coating failure. This project will replace the AMP outlet gate, gate guides, and actuation system. The planned upgrade work requires a total plant shutdown and includes replacing components located inside the reservoir (rolling gate and guides) and on top of the reservoir (the actuation system). The new gate and actuator will enhance operational reliability and safety during a seismic event.

Diemer Basin and Filter Building Rehabilitation

The mechanical, structural, and electrical components of the basins at the Diemer plant have deteriorated from over 50 years of continuous use. They need to be rehabilitated and seismically reinforced in order to maintain reliable treated water deliveries.

Key components to be upgraded include basin inlet gates; flocculator drives and shafting; baffle boards and supports; turntable assemblies, rakes, and catwalks; launders; and structural supports for the equipment. The electrical systems also need to be modified for compliance with current code. In addition, the flexible joint sealant and its adjacent concrete within the basins will be removed and replaced to comply with federal Toxic Substances Control Act (CSCA) regulations. The work will be completed in two phases in order to minimize operational impacts on the plant. Final design was authorized by the Board in February 2013; construction to rehabilitate the east basins has been completed; and construction to rehabilitate the west basins was awarded in October 2018.

The filter valve bodies exhibit corrosion and the rubber seats are worn. This project will replace the obsolete filter valves in the west and east modules of the plant with new valves that conform to American Water Works Association (AWWA) standards. In addition, the existing valve actuators in the west filters will be replaced. The actuators removed from the west filter valves will be refurbished and re-installed on the recently replaced east filter valves. Procurement of the valve actuators was authorized by the Board in September 2017. Installation of the west filter valves was awarded by the Board in October 2018.

Lastly, structural evaluations of the two filter buildings at the Diemer plant concluded that the filter buildings are seismically vulnerable and should be upgraded to reduce the risk of damage from a major seismic event. This project will upgrade the Diemer plant's Filter Buildings to provide operational reliability. This project will reinforce concrete columns in each filter control building, reinforce each clerestory at the roof line, and add new concrete piers within the sump area below the filters. As part of the filter upgrades, some existing mechanical and electrical equipment in the filter control buildings will be relocated. Construction of the east filter upgrades was authorized by the Board in February 2015 and has been completed. Construction of the west filter upgrades was awarded by the Board in October 2018.

Diemer Chemical Feed System Improvements

The chemical feed equipment for ammonia, alum/ferric chloride, sodium hydroxide, liquid polymer, and dry polymer at the Diemer plant has aged and its reliability has deteriorated over the years. Most equipment is over 20 years old and has experienced failures. Some of the repair parts are no longer manufactured and are difficult to obtain. Loss of chemical feed or inadequate feeding capacity could disrupt plant operations. In addition, design criteria for some of the chemicals have changed and the existing equipment is unable to cover the required range for chemical feed. This project will replace the worn-out feed equipment and optimize the system design to improve system reliability and to protect treated water quality. Design was authorized by the Board in March 2011.

A canopy over the caustic soda tank farm and a new fluoride tank farm is needed to improve operations at the Diemer plant. Heat tracing around caustic feed lines is required to feed 50% caustic soda during the winter months. However, rainwater trapped within the chemical containment area could submerge the heat tracing wires. A canopy will minimize rainwater accumulation within the containment area and eliminate electrical hazards. The plant's fluoride tanks have reached the end of their service life and lack access for inspection and maintenance. This project will install a canopy over the existing caustic soda feed equipment; and replace the two fluoride storage tanks, associated feed equipment, and the roof over the fluoride tank farm. Preliminary design was authorized by the Board in August 2012.

Diemer Electrical Improvements

Power and distribution panels that were installed during the original Diemer plant construction, are more than 55 years old. These panels, circuit breakers, and feeder conductors (wires that feed the panels) have exceeded their normal life span and have deteriorated. This project will upgrade the aged electrical equipment to meet the current electrical code and enhance the plant's reliability. The improvements will allow the electrical equipment to be taken out of service for preventive maintenance, replacement, and testing in a safe working condition.

Diemer Emergency Ozone Backup Disinfection

The Diemer plant's existing ozone backup disinfection system was designed to use a low concentration sodium hypochlorite solution to be added at the plant inlet in the event of an unplanned ozone system shutdown. However, the existing sodium hypochlorite storage is only sufficient to provide three hours of back-up disinfection. Manually switching to the liquid chlorine feed system is required after the three hours to meet the disinfection requirement. The sodium hypochlorite system has also proven susceptible to vapor locking. This project will modify the existing plant chlorine system to be used as backup disinfection system in the event of an ozone system shutdown. Construction has been initiated under the General Manager's authority.

Diemer Erosion Control Improvements

The Diemer plant is located on the top of a hill in the city of Yorba Linda and consists of numerous fill slopes. Due to the large water-bearing structures at the Diemer plant, some of these slopes are within the State of California Department of Water Resources Division of Safety of Dams (DSOD)'s jurisdiction. Some slopes within the Diemer plant have eroded and are in need of rehabilitation. This project will provide site improvements for grading, drainage, and erosion/sediment control to erosion-damaged slopes at the plant site. The board authorized geotechnical investigations in September 2018.

Diemer Filter Rehabilitation

The Diemer plant has 48 independent filter units that are normally operated from the main control room, although they also have the capability to be operated locally if needed. Over the life of the Diemer plant, staff has performed regular maintenance on the filters to support reliable plant operation. However, as regulations and source water conditions have changed, filter performance reliability has decreased. Metropolitan's Water Quality recently developed recommendations for the rehabilitation of all Weymouth filters, including reconfiguration of underdrains, media, troughs and surface wash systems. Due to the similarities between the filters at Diemer and Weymouth, staff recommends implementing the same filter modifications at the Diemer plant.

This project will rehabilitate all of the Diemer plant's filters to improve their performance and enhance treatment plant reliability. The planned rehabilitation work includes replacing the filter media with optimized size and depth specifications; replacing the surface wash system with larger piping and improved flow configuration; replacing the underdrains; modifying flow distribution flumes; and raising and replacing the existing troughs to accommodate a higher depth of filter media. This project will enhance infrastructure safety, security, and resiliency; improve the reliability of water deliveries; ensure water quality compliance, worker safety, and environmental protection; and will optimize water treatment and distribution.

Diemer Washwater Reclamation Facilities Reliability Improvement

Approximately 40 percent of Diemer plant's existing Washwater Reclamation Plant (WWRP) is constructed on long slender piles and earthen fill, which form a level surface at the top of a slope. Seismic rehabilitation is required to ensure reliability of the WWRP facility. In addition, submerged WWRP equipment is continually subjected to abrasive and corrosive operating conditions caused by the solids in the used filter backwash water. The WWRP's two identical treatment trains share a common influent channel and both must be removed from service during maintenance. This project will install seismic stabilization facilities and retrofit the WWRP with reliability improvements, including a new coal grit removal facility and new headworks to allow independent shut-down of each individual process trains. This project will consider the use of plate settlers to reduce the footprint and cost of the facility while improving seismic resiliency and meeting water quality and operational objectives. The project also includes modifications to the existing chemical feed system, sludge line, and utilities at the west slope. Final design was authorized by the Board in May 2006.

Diemer Water Sampling System Improvements

The existing sample lines at the Diemer plant do not meet the 10-minute turnover rate requirement from sample point to laboratory sample taps due to long sample lines and pressure limit for the existing polypropylene tubing used to transport the samples. This project will upgrade the existing sample lines and all sample pumps to allow higher operational pressure to shorten the transport time. In addition, new chlorine analyzers, turbidimeters, and pH analyzers will be installed closer to the sample locations to eliminate variable analytical results caused by algae growth, solids deposition, temperature variation, and excessive detention time in the sample lines. These local analyzers will reduce distances from sample point to analyzer to better represent actual conditions in the process stream. Construction was authorized by the Board in October 2018.

Jensen Project Group

Jensen Bull Creek Repair

The Bull Creek channel located on the east side of the Jensen plant has suffered significant erosion from continued stormwater flow during the past wet seasons. This project will rehabilitate approximately 800 feet of the Bull Creek channel to prevent erosion. The work includes: installation of rip rap and slurry backfill along the channel; repairing damaged concrete liner on the channel sides, and restoration of the broken apron next to the railroad bridge. In addition, a catch basin will be constructed along the San Fernando service road to the Jensen plant, to mitigate excessive erosion on the north bank of the Bull Creek.

Jensen Chemical Feed Improvements

This project will improve several chemical feed systems at the Jensen plant, including replacing two fluorosilicic acid (fluoride) tanks, rehabilitation of sulfuric acid tanks, construction of a new caustic soda tank farm near the filtered water line, and containment upgrades for the liquid polymer system.

The Jensen plant relies on two 9,000-gallon cross-linked high-density polyethylene (HDPE) tanks for the storage of fluorosilicic acid. Internal inspections have identified cracks in the two fluorosilicic acid tanks. This project will replace the fluoride tanks with tanks of the same capacity and improved mechanical properties to provide an expected service life of 20 years. Design was authorized by the Board in April 2017.

A recent internal inspection of one of two sulfuric acid tanks at the Jensen plant identified corrosion in the tank wall material and welds. Reconfiguration of the transfer piping and basket strainer is needed to minimize clogging and facilitate chemical transfer between the tanks. This project will rehabilitate Jensen's two sulfuric acid storage tanks, apply new protective coating to the sulfuric acid tank farm, and complete minor modifications to the sulfuric acid feed system piping within the acid tank farm.

The Jensen plant's existing caustic soda tank farm was installed in 1970, and needs to be replaced. Caustic soda is used to increase the pH for corrosion control. The caustic soda dosage varies based on source water quality and the amount of other chemicals (e.g. sulfuric acid and alum) applied during the treatment process. Currently at the Jensen plant, sulfuric acid is added to suppress the pH and control bromate formation and then caustic soda is added to reduce corrosion in the distribution system. This project allow the Jensen plant to meet current water quality design criteria for bromate control with the addition of ammonia and chlorine added upstream of the ozone contactor. This approach would significantly reduce the plant's usage of both sulfuric acid and caustic and reduce overall chemical costs. With the ammonia-chlorine process to control bromate, caustic soda would only need to be added to the filtered water. This allows the new caustic soda tank farm to be sized, designed, and built specifically for adding caustic soda to the filtered water. This project will replace the existing tank farm with a new facility located near the filtered water line.

In addition, the liquid polymer unloading facility does not have a permanent spill containment system. This project will provide a permanent single concrete unloading facility for both chlorine neutralizing caustic soda and liquid polymer chemicals, equipped with a new sump and discharge piping to provide secondary containment. In addition, the ferric chloride handling facility and the Liquid Polymer Building will be removed. Final design was authorized by the Board in May 2013.

Jensen Control Room HVAC

The Jensen plant was placed into service in 1972. During recent wildfire events, it was observed that existing HVAC systems do not meet the objective of reliably maintaining air quality in the control rooms that must be staffed at all times. This project will provide improved air quality in the Jensen control rooms to ensure that the plant can be reliably operated during periods of poor outdoor air quality. This project will: (1) install dedicated high-efficiency heating, ventilating, and air conditioning (HVAC) system for the main plant control room in the administration building and the secondary plant control room in the ozone generator building, and (2) seal the two control rooms from other portions of the building to reduce smoke or other air quality contaminants from entering the control room.

Jensen Entrance Improvements

Both main Jensen plant gates at San Fernando and Balboa entrances need to be redesigned to improve security and traffic flow consistent with Metropolitan's other Treatment Plants. This project will enhance security of the Jensen plant's entrances. Project scope includes replacement of security gates; installation of traffic control devices to improve security at the entrance points of the Jensen plant; and installation of fire-resistant plants and irrigation along the west side of the plant. Final design was authorized by the Board in December 2006.

Jensen Hazardous Waste Containment Facility

The Jensen plant currently stores its hazardous waste in a storage area that was repurposed from a general equipment storage area. The existing site has inadequate storage space for the facilities' needs. In addition, the waste containment area roof covering does not provide adequate protection from the rain and sun. This project will replace and relocate the Jensen plant Hazardous Waste Consolidation Site (commonly known as 90-day storage).

Jensen Inlet Water Quality Instrumentation Upgrades

The Jensen plant's inlet flow meter, water quality analyzers, and flow meter for service connection LA-35 are used to control the chemical addition and to balance water flows throughout the plant. Both of the flow meters need to be replaced. The existing models are obsolete, the manufacturer no longer supports the flow meter consoles, and spare parts are difficult to obtain. Furthermore, the water quality analyzers and plant inlet flow meter consoles are wall-mounted on the exterior of the plant inlet structure, where they are exposed to harsh ambient conditions, resulting in accelerated wear. The flow meter console for service connection LA-35 is located in a deep, confined vault. Two trained personnel with safety equipment are required to perform any maintenance within the vault. The environmentally-controlled enclosure will house the water quality instrumentation, the plant inlet flow meter console, the service connection LA-35 flow meter console, and related electrical equipment including a motor control center, power panel, and communication cabinet. Design was authorized by the Board in August 2014.

Jensen Module 1 and Washwater Pump Rehabilitation

Washwater pumps are used to pump water from the combined filter effluent to the washwater tanks. The tank water is then used to back wash filters. If washwater pumps are unavailable, the plant cannot perform filter backwashes that are necessary to maintain operation of the filtration process. Jensen's Module No. 1 washwater (WW) lift pumps were installed with the original plant construction and have been in service for 50 years. Inspection and testing has revealed significant corrosion in the pumps' housings, and diminished pump output. The pumps have reached the end of their useful life and should be rehabilitated. This project will rehabilitate the Module No. 1 vertical turbine washwater lift pumps, modify the piping for the Module No. 1 service water and washwater lift pumps, and will replace the open motors with closed motors.

Jensen Modules 2 and 3 Flocculator Rehabilitation

Module Nos. 2 and 3 flocculators have been in continuous service since their original installation in the early 1990s. The shafts have become misaligned and the metallic components have gradually deteriorated due to corrosion. This project will rehabilitate the flocculators in Jensen Module Nos. 2 and 3 by refurbishing the intermediate shafts, paddle arms, and paddle wheel hubs; replacing existing stub shafts and through shafts with stainless steel shafts; and replacing the basin pillow block housings and bushings. Improvements also include new FRP paddle blades, new stainless-steel lock collars, new couplings, and new stuffing box assemblies. The dry well bearing housing will also be refurbished and new bronze bushings will be provided in kind. Construction was authorized by the Board in May 2019.

Jensen Modules 2 and 3 Traveling Bridge and Basin Rehabilitation

This project will rehabilitate Modules Nos. 2 and 3 traveling bridges and sedimentation basins at the Jensen plant to enhance solids removal efficiency. Planned work includes replacing the existing traveling bridge end-truck structure, drive system, rails, and racks; retrofitting the suction piping, hoses and launder gates; upgrading the bridges control system and power supply; replacing the 48-existing basin inlet gate actuators; recoating bridge trusses; and replacing basin guardrails. Preliminary design for the traveling bridge repair was authorized by the Board in March 2014.

Jensen Ozone PSU and Critical Component Upgrade

Ozone is used as the primary disinfectant at Metropolitan's treatment plants. However, the critical systems associated with ozone generation have deteriorated or have become obsolete after 15 years of operation and need to be upgraded. This project will upgrade the units that provide power to the Jensen plant's ozone generators and will replace outdated components of other critical systems associated with the plant's ozone generation, which have reached the end of their service life, and are no longer supported by the original equipment manufacturer. The systems to be upgraded include the following areas: (1) power supply unit; (2) nitrogen supply system; (3) ozone destruct units; (4) dissolved ozone; (5) cooling water loop; (6) ozone generator dielectrics; (7) liquid oxygen vaporizers; and (8) other components of the ozone system.

Jensen Plant Electrical Upgrades

The Jensen plant's electrical system was designed to meet then-current electrical codes when the plant was constructed over 40 years ago. The aging electrical equipment has deteriorated through long-term continuous use, lacks redundancy, and is difficult to maintain and repair. Much of the equipment is underrated by current standards and does not have adequate short-circuit interrupting capability, which results in an elevated risk of unplanned outages and equipment damage. This project will replace aging equipment and provide needed redundancy for critical components of the plant's electrical system. To expedite completion of the most critical electrical upgrades while minimizing impacts to plant operations, the upgrade work has been prioritized and staged. The Stage 1 work improved the medium voltage switchgear on the western portion of the plant and provided electrical infrastructure for the Jensen Solar Power Plant. Stage 2 improvements upgrade UPC-7, UPC-9, and their associated motor control centers to support critical process equipment such as the washwater pumps, service water pumps, washwater return pumps, filters, thickeners, sludge pumps, and ammonia facilities. Stage 3 improvements will upgrade the remaining components of the electrical system on the eastern portion of the plant. Construction of Stage 1 is complete, and construction of Stage 2 was authorized by the Board in July 2019.

Jensen Reservoir Bypass Gate Refurbishment

The Jensen plant's existing reservoir bypass gates were installed in 1972 and allow the reservoirs to be isolated in case of water quality issues. The bypass gates are corroded and are currently inoperable because portions of the bronze bearings are degraded and missing. This project will enhance infrastructure safety, security, and resiliency, and will improve the reliability of water deliveries by replacing the reservoir bypass gates.

Jensen Site Security Upgrade

The outdated Jensen plant's security system needs an upgrade to minimize risk of an intrusion. The existing camera system is undersized and aged. Planned upgrade includes installation of additional card readers in sensitive areas; upgrade to existing aging security cameras with high resolution cameras; addition of new cameras to monitor the perimeter of the plant; replacement of security signage to meet current code; security upgrades of first floor windows; addition of horizontal structural support to strengthen the existing gates; and addition of new defensive barrier plants and trees to screen the west side of the Jensen plant.

Jensen Solids Handling System Upgrades

Efficient recovery of water from residual solids is critical for the operation and efficiency of the Jensen plant, the current system consisting of solids thickeners on the Jensen site, and solids lagoons located at the adjacent Los Angeles Department of Water and Power (LADWP) site.

The solids thickeners play a key role in the recovery of water from the residual solids. During thickener operation, operators rotate valves daily to divert flow of residual solids to different thickeners. These valves leak and are difficult to access. This project will reconfigure Solids Pump Station No. 2 to allow better access to the valves; and upgrade the solids splitter vault to facilitate remote operation.

Metropolitan has an ongoing lagoon use agreement with LADWP, which allows for Metropolitan's use of four of the lagoons located at the Los Angeles Aqueduct Filtration Plant (LAAFP) to process solids generated and conveyed from the Jensen plant. Under this agreement, two of the lagoons can be used until October 1, 2062, and the other two until October 1, 2022. To reliably support the Jensen plant operation and provide operational flexibility during unfavorable source-water quality or higher water demand, two new lagoons need to be constructed to replace the two existing lagoons that must be returned to LADWP. This project will design and construct two new lagoons, consisting of an earthen floor with rip-rap banks and reinforced concrete access ramps. The project will include piezometers with data loggers to monitor groundwater under the lagoons, manholes with pumps to convey overflow, decant, and underdrain water to the lagoon inlet distribution system, and electrical & control systems. Lagoon Nos. 9 & 10 will be located on the LAAFP site. In addition, modifications to the groundwater control system may also be considered in advance of the return of two lagoons to LADWP.

Mills Project Group

Mills Basin Solids Removal Improvements

Currently, the Mills plant removes solids from each sedimentation basin using a bridge-mounted siphon system and discharges the solids to the retention basins. However, the siphon flow cannot be adequately controlled. As a result, excessive amounts of water are often siphoned to the retention basins, causing increased solids drying time and reduced retention basin capacity. This project will upgrade the traveling bridges' solids removal equipment and controls to improve the solids removal process at the Mills plant's Modules Nos. 3 and 4. The new equipment and controls will allow the plant to optimize its solids removal process by simultaneously reducing the amount of water removed from the basin and reducing excessive solids build-up in the basins. Preliminary design was authorized by the Board in June 2005.

Mills Fluorosilicic Acid Tank Replacement

The Mills plant relies on two 6,250-gallon cross-linked high-density polyethylene (HDPE) tanks for the storage of fluorosilicic acid. These tanks have a recommended service life of 10 years and have been in service since 2007. Recent inspections have identified leakage at the bolted connections of both tanks. This project will replace the fluorosilicic acid storage tanks with capacity of 7,000-gallon and improved mechanical properties to provide an expected service life of 20 years. The project will also replace coating in the containment area as necessary. Design was authorized by the Board in April 2017.

Mills Plant Electrical Upgrades

The electrical system at the Mills plant has deteriorated through long-term use, is difficult to maintain and repair, and needs improved backup capability. Failure of a single electrical device could impact the treatment process. The electrical upgrades at the Mills plant will be completed in three stages. Stage 1 upgrades will address the highest priority work, including replacement of obsolete circuit breakers, expansion of the electrical building for UPC-9, installation of new air conditioning system, installation of MCCs and distribution of power feed to chemical feeds systems, washwater return pumps, modules 3 and 4 filter surface wash pumps, and improvement of power reliability for key process equipment. Stage 2 upgrades will add a second incoming 12 kV service from Riverside Public Utilities and upgrade the plant's main switchgear and standby generator switchgear. Stage 3 upgrades will modify electrical manholes, replace digital metering modules for all motor control centers, and add fiber optic cabling. Construction of Stage 1 project was authorized by the Board in August 2017.

Mills Modules 3 and 4 Flash Mix Chemical Containment Upgrades

The existing flash mix areas at Mills Plant Modules 3 and 4 contain chemical feed equipment for ammonia, polymer, caustic, alum, sodium hypochlorite and chlorine. The equipment is contained within a low concrete curb. To reduce the risk of chemical releases, improved containment is needed. This project will replace the chemical piping in the area with double-walled piping with a leak detection system, replace flow meters and valves, relocate control panels, and install flow meter display units in a weatherproof enclosure outside of the containment areas. Final design was authorized by the Board in October 2016.

Mills Ozone PLC Control and Communication Equipment Upgrade

The Mills plant ozonation equipment utilizes a type of Programmable Logic Controller (PLC) that was introduced to the commercial market in 1988. Computer hardware from that era is now outdated, and the PLC manufacturer has announced that it will no longer produce or support this equipment. Inventories of spare parts will no longer be maintained once exhausted. Failure of a PLC and/or its communication module could cause a disruption in the ozone control system. This project will replace the equipment and modify the software to operate with the new equipment for the Mills ozone control system. The upgraded system will feature Metropolitan-standardized PLCs in an open-architecture approach that staff will be able to maintain and upgrade in the future. In addition, the ozone power supply unit and dielectric will be upgraded, as these components have reached the end of their service life and are no longer supported by the original equipment manufacturer.

Mills Plant Perimeter Security and Erosion Control Improvements

The Mills plant has approximately 14,500 linear feet of perimeter fencing that is primarily a chain link with a height of six to eight feet. The fencing and several of the entry gates are deteriorating and may be vulnerable to security breaches. In addition, stormwater runoff has eroded an area on the southern boundary of the plant. This project will replace 7,700 feet of the existing fence with security fencing along the plant's southern, northern and western boundaries, and replace three existing gates with taller security gates with surveillance cameras. Grading and erosion control improvements, such as installation of v-ditches and flow re-direction, will also be performed to prevent sediment from leaving the site. All improvements will be consistent with Mills plant's architectural design guidelines, and with Metropolitan's approach to facility security. Preliminary design was authorized by the Board in October 2017.

Skinner Project Group

Skinner Finished Water Reservoir Slide Gates Rehabilitation

The three operational slide gates (Inlet, Outlet, and Bypass) that control the inlet and outlet flows from the Skinner Finished Water Reservoir have been exposed to a corrosive and wet environment since 1991. Visual inspections identified leaking gates and continuing deterioration of the slide gates' exterior coatings. These gates have been in service for 26 years and have not been blasted or recoated. This project will rehabilitate the three Skinner Finished Water Reservoir slide gates. The gates will be removed from the gate frames, thoroughly inspected for carbon steel material loss, blasted and recoated to extend their service life. In addition, the rejection structure will be modified to separate the stormwater and rejection water pipelines and prevent potential stormwater from flowing into the finished water reservoir.

Skinner Fluorosilicic Acid Tank Replacement

Fluorosilicic acid tanks will be removed and replaced with two 8,200-gallon aboveground (Fluoride) tanks at the Skinner Plant. New extrusion-molded linear HOPE tanks will be installed. To minimize changes in the tank farm, the new tanks will match the dimensions and capacity of the existing tanks. Scope will include modification to the tank farm to provide access during construction and associated piping work to connect the new storage tanks to the existing chemically compatible PVDF tank farm piping. The new tanks will be mounted on the existing tank pads.

Skinner Module 7 Filter Inlet Valve Gearbox Replacement

Replace existing sixteen (16) units of discontinued and failing filter inlet valve gearboxes on Module 7 East and West Filter basins with new gearboxes to maintain a reliable filter operation at Skinner Plant. Removal of existing gearboxes and installation of new units will be undertaken by Skinner District Forces with the assistance of Engineering. Scheduling of the equipment replacement will be in accordance with Skinner Plant's water treatment operational requirements and with the water demand and supply conditions within the Skinner service area. Minor field adjustments will be done to align the existing actuators and vertical valve extension stems with the new valve and gearbox assemblies at the bottom of the filter influent channel.

Skinner Ozone Contactor Roof Elastomeric Coating

Leakage through cracks in Skinner plant's ozone roof deck was found in 2010. Cracks in the concrete roof deck can allow rain and nuisance water to be drawn down into the contactors which then mixes with the freshly ozonated water, creating a potential cross-connection. The water and air penetrating through the existing concrete roof decks exposes the rebar and structural steel in the decks, creating the potential of eventual structural failure to the roof decks. In addition, in order to keep the constant vacuum in the contactors, the Ozone Destruct Units have to work excessively which consumes additional electricity and affects the Destruct Units reliability and long-term life span. This project will abrasive blast, apply primer, and coat 61,000 square-feet of the Ozone Contactor Building concrete roof deck with an elastomeric coating to reduce potential structural damage and operational impact.

Skinner Ozone Contactors 1-2 and Influent Channel Concrete Refurbishment

Ozone gas and ozonated water are extremely corrosive oxidizers and can penetrate concrete walls to cause significant corrosion of structural steel and equipment. This project will inject chemical grout into the existing concrete walls of the Skinner Ozone Contactor Nos. 1 and 2 and the influent channel, in order to prevent ozone gas and ozonated water from penetrating the concrete walls.

Skinner Ozone Generator PLC Control & Communication Equipment Upgrade

The Skinner plant ozonation equipment utilizes a type of Programmable Logic Controller (PLC) that was introduced to the commercial market in 1988. Computer hardware from that era is now outdated, and the PLC manufacturer has announced that it will no longer produce or support this equipment. In addition, inventories of spare parts will no longer be maintained once exhausted. Failure of a PLC and/or its communication module could cause a disruption in the ozone control system. This project will replace the equipment and modify the software to operate with the new equipment for the Skinner ozone control system. The upgraded system will feature Metropolitan-standardized PLC's in a new code format to enable future maintenance and modifications as may be operationally necessary.

Skinner Plant 1 - Concrete Joint Sealant Replacement

Concrete joint sealant throughout Skinner Plant 1 is cracked, delaminating, degraded, or missing as it has exceeded its service life. The degradation has allowed vegetation growth and moisture, sediment, and other outside contaminants to enter and penetrate into the concrete joints. This project will remove severely degraded concrete joint sealant throughout Plant 1, prepare and primer the existing joints, and replace with new concrete joint sealant.

Skinner Plant 1- Modules 1, 2, and 3 Filter Weir Rehabilitation

Filter weirs at the Skinner Plant 1 (Modules Nos. 1, 2, and 3) maintain water levels within the Module's filter weir forebays for appropriate backwash head pressure. Adjustment to the weirs heights is required as water temperatures change throughout the year and as the volume of water being treated changes. All 24 weirs in three modules are adjusted together to maintain a balanced flow from Plant 1. Weir heights need to be carefully adjusted to prevent frequent backwashes or loss of filter media. The current design only allows safe adjustment while the Module is at zero flow or is shut down for service. This project will rehabilitate Modules 1, 2, and 3 filter weirs (24 total) from stackable wooden 2x4s to mechanically operated weirs. The existing concrete weir openings will be modified to accept a stainless-steel weir gate guide and a double panel weir gate. A double panel weir gate will be installed with one panel stationary and one panel adjustable that allows flow adjustments. The weir gate is to be mechanically operated by tandem pedestal lifts mounted above the gate on the existing concrete deck.

Skinner WTP Service Building 1 Rehabilitation

Service Building 1 Rehabilitation will replace the sanitation facilities and roofing system and improve the staff work/meeting/lunch areas of the building. The scope includes the following: replace the roofing system; replace/upgrade all MEP and HVAC systems (mechanical; electrical; plumbing, heating, and air conditioning) to current building codes; upgrade IT requirements; comply with ADA requirements; improve employees shared facilities and offices (bathroom, locker rooms, break rooms, meeting rooms, cubicles); and abate all hazardous materials.

Weymouth Project Group

Weymouth Basin 5 - 8 and Inlet Channel Refurbishment

The basin inlet channels deliver water to each of the Weymouth plant's eight flocculation/sedimentation basins. The inlet channel serving Basins Nos. 1-4 is a concrete box culvert constructed in 1940, while the inlet channel serving Basins Nos. 5-8 was constructed in 1962. A structural assessment of the basin inlet channels has found that they should be upgraded to reduce the risk of damage from a major seismic event. Inspections have also identified that wooden baffle walls have deteriorated after repeated wet and dry cycles and have shown a propensity to support algae and microbial growth.

For the inlet channel serving Basins Nos. 1-4, this project will strengthen the conduit and will reconfigure the channel to provide additional flexibility. For the Basins Nos. 5-8 inlet channel, the project includes repairing the steel guides; replacing the drive and paddle shaft assemblies; replacing the baffle boards, supports, and paddle wheel boards in the flocculation section. The project also includes filling the interior corners of each cell with sloping concrete fillets to direct residual solids into the path of the rotating scrapers; refurbishing the structural members of the catwalks; refurbishing the sedimentation Basins Nos. 5-8 sludge collectors; and replacing launders in the sedimentation section. Additionally, the coal tar-coated rotating steel sludge rakes will be replaced with stainless steel rakes. Basin inlet gates and inlet channel structural improvements are also part of this project.

Weymouth Administration and Control Building Seismic Upgrades

The Weymouth Administration Building has been in service since 1941 and houses the plant's control room and administrative staff. The building needs to be seismically upgraded to current standards since this building is over 75 years old and is a critical facility to the operation of the water treatment plant. The project includes reinforcement of the walls for the plant's filter outlet channel and abandoned inlet channel.

In conjunction with the seismic upgrades, the California Building Code (CBC) requires the installation of a fire sprinkler system and accessibility improvements. Electrical, mechanical, and plumbing components impacted by the upgrades will also be reconfigured. The Weymouth plant's water quality sampling laboratory and office space will also be updated and optimized where required. The existing laboratory has been in continuous service for nearly 30 years. The Board authorized final design of the building upgrades in January 2018.

Weymouth Basin Gates Improvements

Influent gates for the Weymouth plant's eight sedimentation basins are between 55 to 77 years old and at the end of their service lives. The existing coal tar coating on each gate has deteriorated resulting in corrosion and leaking. The inability to provide a water-tight seal when isolating basins requires the use of sandbags and pumping to keep nuisance water out of the basins in order to perform maintenance. Additionally, the local controls used for the basin gates make it time-consuming to open or close the gates. This makes it difficult to respond to sudden changes in plant flow. This project will replace the deteriorated inlet gates in Basins Nos. 1-4 with stainless steel slide gates, install new gate actuators capable of SCADA monitoring and control from the plant control room, and construct a new influent conduit to Basins 3 & 4. Preliminary design was authorized by the Board in July 2012.

Weymouth Basins 1 & 2 Rehabilitation

Basins Nos. 1 & 2 were built in 1939 as part of the original Weymouth plant construction. Each basin has a treatment capacity of 57.5 million gallons per day. These basins were originally designed to treat Colorado River Water (CRW). With the addition of State Project Water (SPW), the plant periodically requires higher coagulant dosages than CRW. As a result, the basins operated at a higher solids loading rate than the rate for which the basins were originally designed. This situation has dramatically increased run time on the basins' circular sludge rakes, which remove sludge from the basins. As originally designed, the sludge rakes only operated 1 to 2 hours every 4-7 days. Under current conditions, the sludge rakes are operated 6 to 12 hrs each day which results in more frequent maintenance. These basins also have had issues with low solids-settling rates within the basins and high particle loading to the filters, or short-circuiting. The project includes the rehabilitation of the flocculation basins, settling basins, sludge collection equipment, baffling, and edge weirs. Study and preliminary design were authorized by the Board in September 2004.

Weymouth Chlorine System Upgrade

The chlorine feed system must be operational at all times to meet State Division of Drinking Water requirements. Chlorine is added downstream of the filters to form a chloramine residual and maintain disinfection in the distribution system. In addition, chlorine serves as the back-up primary disinfectant for the plant. There is insufficient chlorine capacity to meet these needs. In addition, maintenance of the feed equipment can only be performed during low-flow periods.

This project will upgrade the chlorine evaporator system at the Weymouth plant to enhance reliability, safety and meet water quality design criteria. The upgrade includes constructing six additional evaporators housed in a new structure adjacent to the existing chlorine containment building. The six new evaporators would serve as the second chlorine process train. Two additional chlorinators will also be installed to provide additional capacity redundancy and improve reliability. Construction was authorized by the Board in December 2018.

Weymouth Combined Filter Effluent Mixing Improvement

At the Weymouth plant, the combined filter outlet splits into two concrete channels upstream of the finished water reservoir. One channel, which is 140 inches wide, and continues to the east, the other channel, which is 120 inches wide, continues south. Proper mixing of caustic soda, ammonia, and chlorine occurs only when all of the plant's filter outlet flow is directed either to the 140-inch or the 120-inch channel. However, when the plant flow exceeds 300 million gallons per day (MGD), flow is divided between the two channels which results in poor mixing due to the proximity of the chemical injection points to the intersection of the 140-inch and 120-inch channels.

This project will evaluate mixing in the filter outlet channel, perform hydraulic studies, and assess options to improve mixing in the channels. These options may include operational changes, rehabilitation or replacement of valves and gates, structural modifications, and relocation of chemical injection points.

Weymouth Dry Polymer System

Cationic polymers are used as a coagulant aid for the washwater reclamation plant, and nonionic polymers are needed to meet filter performance regulations when treating high State Project Water (SPW) blends. Depending on the quality of the source water, both dry polymers may need to be applied simultaneously. However, the current dry polymer system only has one mixing train available. Since these feed systems share a common polymer mixer, it is difficult to operate both systems at the same time. Additionally, the existing dry polymer mixer uses a type of batch mixer that can only make a single batch at a time and frequently clogs. The mixer is housed in a metal structure that does not meet current seismic codes.

The project includes installation of a dry polymer mixing system to allow simultaneous mixing and feeding of cationic and nonionic polymers, independently; construction of a new building designed to current seismic standards to house the dry polymer mixing system; and construction of a covered containment area to house feed equipment and new polymer storage tanks. Final design was authorized by the Board in September 2014.

Weymouth Filter Sump Corner Filled Rehabilitation

The sump well located at the Weymouth plant's Filter Building No. 1 and 2 is experiencing sludge formation in the corners of the sump. This build-up of coal and sand in the corners of the sump is inhibiting the operation of the sparger during transfer of media to the coal removal structure. This project will rehabilitate the sparger and associated piping and will evaluate the effectiveness of in-filling the sump corners and building sloped concrete "angle of repose" structures to prevent build-up.

Weymouth Filter Valve Replacement

The original filter valves in Building No. 1 were installed in two stages in 1941 and 1949, and were replaced in the early 1970s with similar valves. These valves are not consistent with modern American Water Works Association (AWWA) standards. The filter valves in Building No. 2 were installed during the second plant expansion in 1962 and are similar in dimension to the valves in Building No. 1. The existing filter valve bodies exhibit corrosion, the rubber seats are worn, and many valves leak after 45 to 55 years of continuous operation. In addition, the frequency of repairs to the actuators is increasing, and spare parts are difficult to obtain. This project will replace all filter valves and actuators in both Filter Building Nos. 1 and 2 with Metropolitan furnished AWWA-standard valves and current industry-standard actuators. Award of the procurement contract was authorized by the Board in November 2017.

Weymouth Hazardous Waste Staging and Containment

The existing hazardous waste storage area requires a number of upgrades to enhance compliance with current codes and to provide enhanced safety measures, such as providing spill containment, eyewashes and safety shower, a canopy, leak detection, and sump. These utilities are all available at the existing sulfuric acid tank farm, which is no longer utilized. As the existing hazardous waste storage area does not provide containment to capture spills or leaks there is potential for hazardous waste to runoff to the storm drain system as well as exposure to plant personnel.

This project will relocate the existing Hazardous Waste Staging and Containment Facility to the existing sulfuric acid tank farm in order to account for deficiencies at the existing facility. The existing sulfuric acid tank farm, located approximately 100 feet from the existing hazardous waste area, is a 30' x 30' containment area with a roof, sump, SCADA controls, eyewash station, power, and potable water that can be cost effectively utilized to relocate the hazardous waste facility.

Weymouth Solids Handling Rehabilitation

Residual solids generated during the water treatment process are sent to the gravity thickeners to separate water from the solids before being sent to belt presses in the solids handling facility for further dewatering. Dewatered solids are then pumped to elevated hoppers for storage prior to offsite disposal. Mechanical equipment at the solids handling facility has experienced frequent failures, and the facility itself requires full-time staffing to operate. Regular failures occur with the system's bridge breakers, which break apart dewatered solids so that they can be pumped to the hoppers. The facility also experiences frequent issues with the hoppers. After the belt presses dewater the solids, polymer solution is added to the discharge side of the cake pumps to facilitate pumping. This produces a cake-like material that often sticks to the hoppers' mechanical components and impedes opening and closing of the hopper gates. Rehabilitation of the solids handling facility is necessary to maintain its long-term function, reduce maintenance and operational labor costs, and reduce chemical costs.

This project will identify and implement the most feasible rehabilitation of the facility and to evaluate the capacity of the facility's decant lines. Options for rehabilitation include: (1) eliminating the existing cake pumps and installing a conveyor belt system to transfer the dewatered solids to the hopper system without the addition of liquid polymer; and (2) transferring solids to a separate storage area where the solids are held prior to being hauled offsite. This project will also evaluate modifications within the building that would facilitate future equipment repairs and replacement.

Weymouth Wastewater Pumpback Improvements

When ozone is used as the plant's primary disinfectant, the ozone generators will produce the amount of ozone needed based on flow into the plant. The plant inlet flow can experience fluctuations when the washwater return pumps that send flow back to the head of the plant, cycle on and off. Ideally, the flow to the ozone contactors would be consistent. However, the existing pump station has a small forebay as compared to the capacity of the washwater pumps. The forebay receives flow from both the Washwater Reclamation Plant and the Oxidation Demonstration Plant (ODP) clearwell. Significant changes in flow from these two facilities may increase fluctuation in ozone dose requirements.

This project will modify the ODP clearwell pumps with variable speed pumps; improve washwater pump station pump programming to moderate changes in pump speed; reconfigure the ODP clearwell pumps so that one pump is dedicated for backwash, one pump is dedicated for pumpback, and one pump as a spare for either of the two pumps; and relocate the ODP clearwell pump discharge point to a point downstream of the forebay. Preliminary design was authorized by the Board in May 2014.

Weymouth Water Quality Instrumentation Improvements

Existing instrumentation used for process control of Title 22 regulatory monitored constituents, including turbidity, fluoride, chlorine, ammonia, pH, conductivity, dissolved oxygen, and temperature is currently located in the basement of the Weymouth Administration Building. This location is subject to flooding in the event that existing sump pumps fail and is over 500 feet from the sampling locations, which can cause inaccurate water quality results and a delay in receiving accurate data. A new instrumentation enclosure will be constructed to provide redundancy and isolation for maintenance purposes and will be in close proximity to the sample locations. Shorter sample lines to online analytical instrumentation would minimize the potential for interference of continuous measurements due to biological growth within the sample lines and provide more accurate results.

This project will construct a new water quality instrumentation enclosure closer to the sample points at the Finished Water Reservoir, purchase and install new sample pumps at the Reservoir Inlet, relocate the Reservoir Inlet sample points closer to the inlet gates to provide a more representative sample, and purchase and install new water quality monitoring instrumentation to provide reliable real time water quality monitoring of the Reservoir Inlet, Orange County Feeder, and the Upper Feeder. Final design was authorized by the Board in May 2014.

Wheeler Gates Security Improvements

Construction vehicles and chemical delivery trucks access the Weymouth plant through the Wheeler entrance gate. This project will provide security improvements to the Weymouth plant's Wheeler gate, including construction of a new guard enclosure; and improved lighting and communication features. This project is the third phase of the Weymouth plant's perimeter improvements. Final design was authorized by the Board in November 2006. Phases 1 and 2 are complete.

Treatment - General Project Group

CUF Dechlorination System Upgrade

The chlorine unloading facility (CUF) is used to transfer liquid chlorine from rail cars to cargo trailers for delivery to Metropolitan facilities. The goal of this project is to enhance compliance with discharge regulations and allow the transfer of liquid chlorine from rail cars to cargo trailers to occur over a wide range of operating conditions. This project will evaluate available technologies; perform a pilot study, if needed, to determine the most feasible technology; and will explore methods and technologies of neutralizing chlorine in order to improve chlorine transloading ability throughout the year. This project will upgrade the existing system that neutralizes chlorine at CUF.

Water Quality/Oxidation Retrofit Program

Fiscal Year 2020/21 Estimate: \$0.02 million

Fiscal Year 2021/22 Estimate: \$0 million

Program Information: The Water Quality/Oxidation Retrofit Program (ORP) is comprised of projects to add new facilities to ensure compliance with water quality regulations for treated water, located at Metropolitan's treatment plants and throughout the distribution system.

Accomplishments for FY 2018/19 and FY 2019/20

- No new projects initiated during the last biennium.
- Major milestones achieved during the last biennium:
 - Weymouth Hypochlorite Feed System - Completed construction, start-up and commissioning

Objectives for FYs 2020/21 and 2021/22

| Project | Total Project Estimate | Estimated Completion | Major Milestones |
|---|------------------------|----------------------|-----------------------|
| Weymouth Hypochlorite Feed Facilities | \$ 14,000,000 | 2020 | Complete project |
| Weymouth ORP - Ozonation Facilities Construction, and Completion Activities | \$ 162,700,000 | 2020 | Complete project |
| Mills Enhanced Bromate Control | \$ 2,100,000 | 2020 | Complete final design |

WQ/ORP - All Project Group

Mills Enhanced Bromate Control Facilities

The Mills plant is currently using a temporary system built for bromate reduction. This system has been running successfully and has proven the effective use of chloramines in bromate control and the reduced operational costs over a wider range of influent water quality conditions. This project will replace the temporary feed, metering, monitoring, and injection (chlorine and ammonia) system with a permanent system which will incorporate new doubled walled piping, double wall containment, new flow metering, new chlorinators, new analyzers, and new ammonia feed tank. The full implementation of this project will significantly reduce the current operational costs of bromate control as well as provide greater control of bromate formation over a wide range of influent water quality conditions. The project also includes replacement of two existing chlorinators with new units for lower chlorine dosage control flexibility. Final design was authorized by the Board in February 2013.

Selected Demographic and Economic Information for Metropolitan's Service Area

The area served by Metropolitan represents the most densely populated and heavily industrialized portions of Southern California. Metropolitan estimates that approximately 18.9 million people lived in Metropolitan's service area in 2017, 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 2018, 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. The Six County Area economy ranked between South Korea (\$1.619 trillion) and Australia (\$1.432 trillion), with an estimated gross domestic product (GDP) of just over \$1.538 trillion. The Six County Area's gross domestic product in 2018 was larger than all states except California, Texas, and New York.

Table 14. Ranking of Areas by Gross Domestic Product

| Country | Dollars (in Billions) |
|--------------------|------------------------------|
| United States | 20,580 |
| China | 13,608 |
| Japan | 4,971 |
| Germany | 3,997 |
| United Kingdom | 2,968 |
| California | 2,825 |
| France | 2,778 |
| India | 2,726 |
| Italy | 2,074 |
| Brazil | 1,868 |
| Texas | 1,776 |
| Canada | 1,713 |
| New York | 1,676 |
| Russian Federation | 1,658 |
| South Korea | 1,619 |
| Six County Area | 1,538 |
| Australia | 1,432 |
| Spain | 1,426 |
| Mexico | 1,224 |

Source: Countries - World Bank; U.S. - Bureau of Economic Analysis; California and Six County Area - U.S. Department of Commerce

Summary of Recent Trends and Outlook for the Six County Area Economy

The national economy is in the ninth year of economic expansion. GDP growth since the third quarter of 2014 is shown below. GDP growth in the 2nd and 3rd quarters of 2019 declined to near 2%. Reported job growth averaged 189,000 per month in 2017, 204,000 per month in 2018 and 179,000 per month so far in 2019. Recent job growth has resulted in average hourly earnings rising by 3.0% over the 12 months ending October 2019 and the unemployment rate declining to 3.6% in October 2019.

On October 30, 2019, the Federal Reserve Bank lowered the federal funds rate to between 1.5% and 1.75%--the third decline in 2019. At the same time the Federal Reserve Bank signaled no more rate changes are currently planned in the near term. Inflation is now averaging close to 2% on an annual basis and wage gains have risen to above 3% on an annual basis.

The national economy faces potential slowing in the coming years from three factors--possibility of continuing higher tariffs, a decline in labor force growth from baby boomer retirements, and slowing world economic growth. The UCLA national forecast is shown below with declining GDP and job growth in 2020 and 2021. Congressional Budget Office forecasts GDP growth of 2.1% in 2020, 1.7% for 2021-2024 and 1.8% for 2024-2029.

The Six County Area has regained all the jobs lost during the recession and more . Year-over-year job gains continued into 2019 with year-over-year gains ranging from a high of 2.3% in Riverside-San Bernardino metro area to a low of 0.4% in Ventura County. Job growth for the entire Six County Area for the 12 months ending September 2019 was 139,000 jobs or a gain of 1.5% compared to a 1.9% increase in jobs for the nation for the comparable period. Unemployment rates in the Six County Area have declined sharply between 2010 and September 2019. In September 2019 unemployment rates ranged from a low of 2.4% in Orange County to a high of 4.5% in Los Angeles County.

California and the Six County Area are experiencing growth in both domestic and foreign visitors. Hotel rates and occupancy are increasing in the Six County Area and the same is true for employment in the hotel and amusement park sectors. In 2018 Los Angeles County set tourism records for the fourth year in a row in visitors, 50 million up 3.1% over 2017, according to data from the Los Angeles Tourism and Convention Board. In 2018 passenger travel at Los Angeles International Airport was up 3.5% to 87.5 million trips to set an all-time record. Air passenger travel at the major airports in the Six County Area reached record levels in 2018 and is up 1.9% through August 2019 to 135.3 million trips led by gains Burbank, Ontario and San Diego airports.

Population growth in the Six County Area since 2000 compared with previous decades. Population growth slowed after 2005 as high housing prices and large job losses contributed to larger levels of out-migration to other areas of California and other states. Population growth averaged 160,000 between 2010 and 2018 according to the California Department of Finance (DOF) estimates, and growth slowed in the past three years. The Six County Area had 22.3 million residents in 2018, approximately 56% of the State's population.

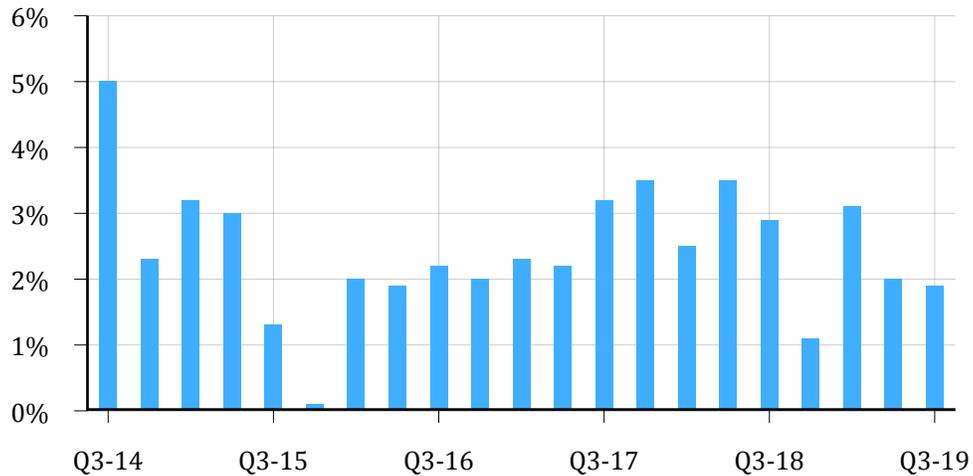
Income, taxable sales and assessed valuation in the Six County Area increased since 2013 along with record levels in foreign trade and film permits. Gains in income, taxable sales and assessed valuation are all outpacing the growth in consumer price indices in the Six County Area all of which are helping local government revenue growth.

Long-term job growth is driven by the Six County Area's economic base—those sectors that sell most of their goods and services in national and world markets outside of the Six County Area. Recent projections by the Center for Continuing Study of the California Economy (CCSCE), the Southern California Association of Governments (SCAG) and the San Diego Association of Governments (SANDAG) report that the Six County Area will see job growth that slightly exceeds the national average during the next 10 to 30 years, led by gains in Professional and Business Services, Wholesale Trade, Tourism and Entertainment and Health Care.

An Update on the U.S. Economic Outlook

The national economy is in the ninth year of economic expansion. GDP growth since the third quarter of 2014 is shown below. GDP growth in the 2nd and 3rd quarters of 2019 declined to near 2%.

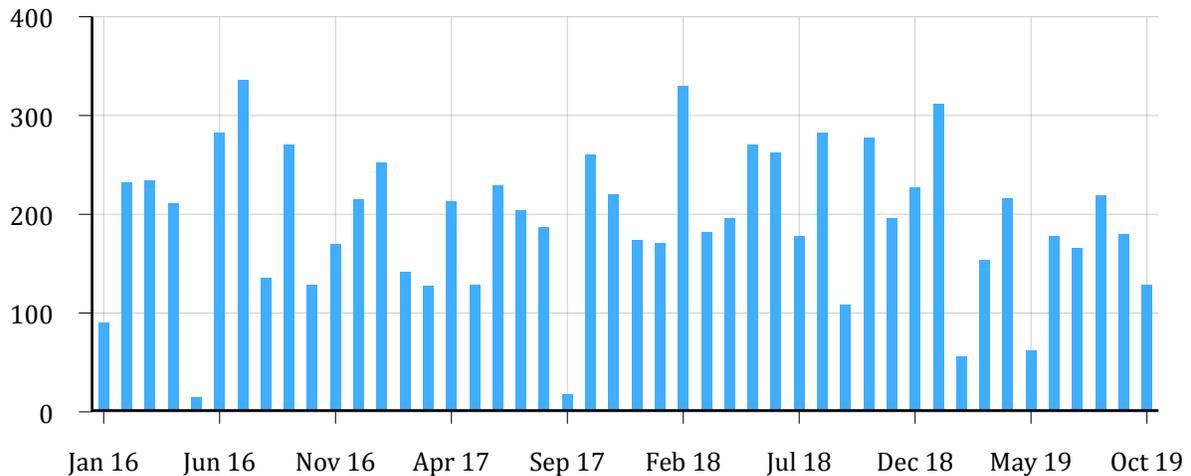
U.S GDP Growth



Source: Bureau of Labor Statistics, U.S. Department of Commerce

The nation continues to add jobs supported by more workers rejoining the labor force and more previously unemployed workers finding jobs. Reported job growth averaged 189,000 per month in 2017, 204,000 per month in 2018 and 179,000 per month so far in 2019. A large portion of recent job growth has come from existing residents finding jobs and not from population growth. Recent job growth has resulted in average hourly earnings rising by 3.0% over the 12 months ending October 2019.

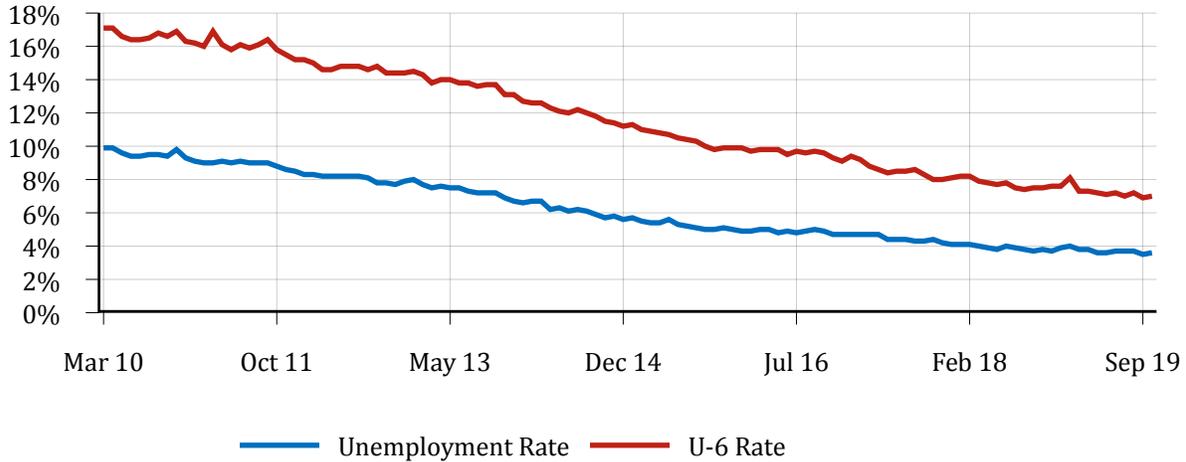
U.S Job Trends Jan 2016-Oct 2019



Source: Bureau of Labor Statistics, U.S. Department of Labor

The unemployment rate in the nation has declined from near 9.9% in March 2010 to 3.6% in October 2019. The U-6 unemployment rate shown below, which includes people working part-time but wanting full-time work and those marginally attached (not currently in the labor force but wanting to work), was 7.0% in March 2019 below the pre-recession level of 7.9% but also well below the 17.1% high in late 2009. Both unemployment rates have declined slightly in recent months.

U.S. Unemployment Rate

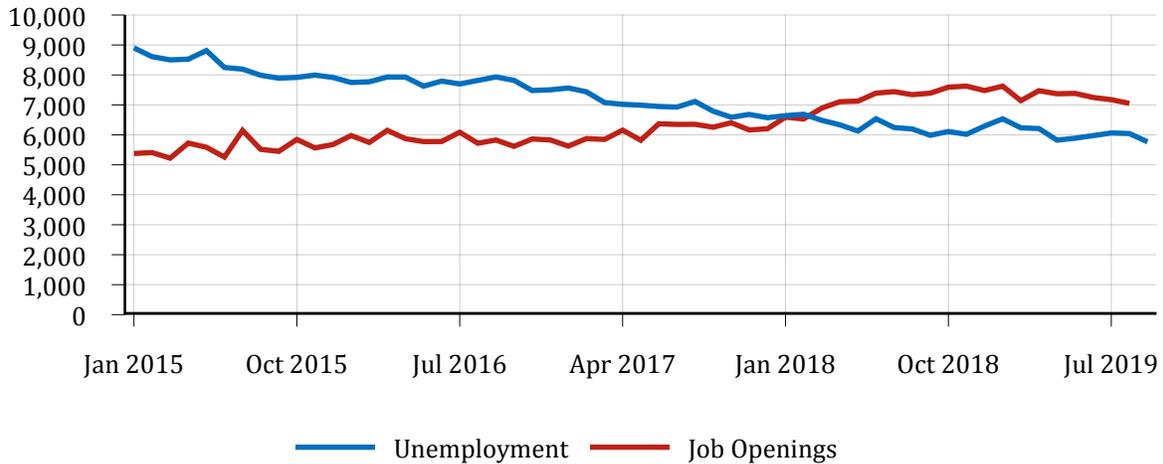


Source: Bureau of Labor Statistics, U.S. Department of Labor

Two other labor market indicators confirm that the job market remains tight. The labor force participation rate declined after 2007 during the recession. But recent strong job growth has brought some workers back into the labor force. The overall participation rate is below the 2007 level as a result of the aging of the workforce pushing more workers into age groups with low participation rates but it has increased slightly in recent months despite increasing numbers of retirements.

In addition, for the 17 straight months the number of job openings has exceeded the number of unemployed workers. In August 2019 there were 7.1 million job openings and just 6.0 million unemployed workers. These trends point to the strength of the current labor market but also to the difficulty in finding workers for future job growth. (See figure on the next page.)

Job Openings and Unemployment

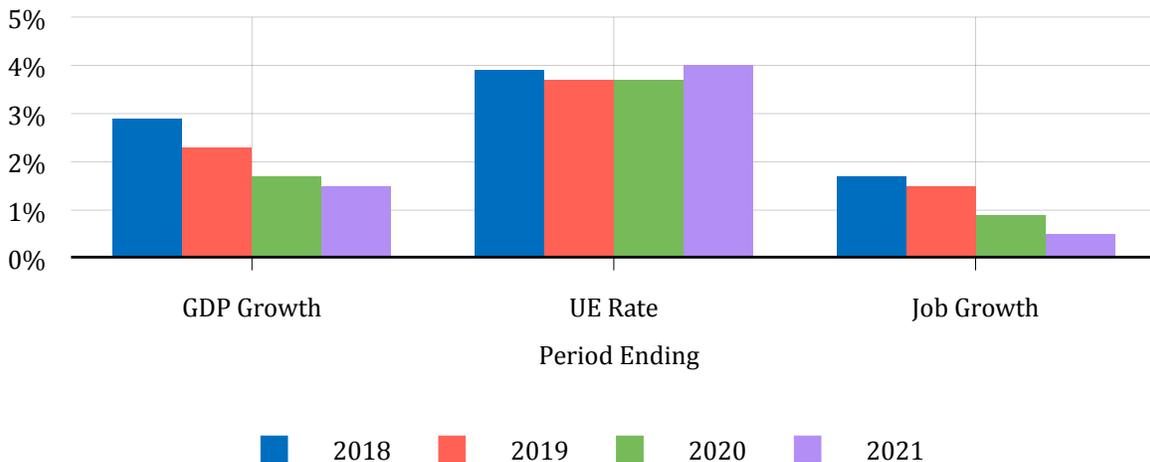


Source: Bureau of Labor Statistics, U.S. Department of Labor

On October 30, 2019, the Federal Reserve Bank lowered the federal funds rate to between 1.5% and 1.75%--the third decline in 2019. At the same time the Federal Reserve Bank signaled no more rate changes are currently planned in the near term. Inflation is now averaging close to 2% on an annual basis, wage gains have risen to above 3% on an annual basis and 30-year mortgage rates have declined to near 3.75% in October 2019.

The national economy faces potential slowing in the coming years from three factors--the possibility of continuing higher tariffs, a decline in labor force growth from baby boomer retirements, and slowing world economic growth. The UCLA national forecast is shown below with declining GDP and job growth in 2020 and 2021. Congressional Budget Office forecasts GDP growth of 2.1% in 2020, 1.7% for 2021-2024 and 1.8% for 2024-2029.

UCLA Forecast Sept. 2019



Recent Six County Area Job Growth Trends

The Six County Area has regained all the jobs lost during the recession and more. Year-over-year job gains (see the table below) continued into 2019 with year-over-year gains ranging from a high of 2.3% in Riverside-San Bernardino metro area to a low of 0.4% in Ventura County. Job growth for the entire Six County Area for the 12 months ending September 2019 was 139,000 jobs or a gain of 1.5% compared to a 1.9% increase in jobs for the state for the comparable period.

Job growth was aided by gains in foreign trade, tourism and professional services as well as a rebound in construction and related sectors and continuing growth in health care and food services.

Table 15. Recent Employment Trends (Non-Farm Wage and Salary Jobs in Thousands)

| County | 2007 | 2010 | 2017 | 2018 | Sept 18 | Sept 19 | Sept 18-19 % Change |
|--------------------------|---------|---------|---------|---------|---------|---------|------------------------|
| Los Angeles | 4,254.2 | 3,923.2 | 4,448.3 | 4,510.1 | 4,506.2 | 4,556.7 | 1.1% |
| Orange | 1,524.0 | 1,370.3 | 1,617.0 | 1,649.4 | 1,649.4 | 1,670.9 | 1.3% |
| Riverside-San Bernardino | 1,289.9 | 1,150.7 | 1,454.9 | 1,504.2 | 1,502.6 | 1,537.7 | 2.3% |
| San Diego | 1,323.8 | 1,242.0 | 1,453.2 | 1,484.6 | 1,484.4 | 1,515.0 | 2.1% |
| Ventura | 298.4 | 275.5 | 296.5 | 300.4 | 307.8 | 309.1 | 0.4% |
| Total Six County Area | 8,690.3 | 7,961.7 | 9,269.9 | 9,448.7 | 9,450.4 | 9,589.4 | 1.5% |

Source: California Employment Development Department

Unemployment rates in the Six County Area have declined sharply between 2010 and September 2019 (See the table below). In September 2019 unemployment rates ranged from a low of 2.4% in Orange County to a high of 4.5% in Los Angeles County.

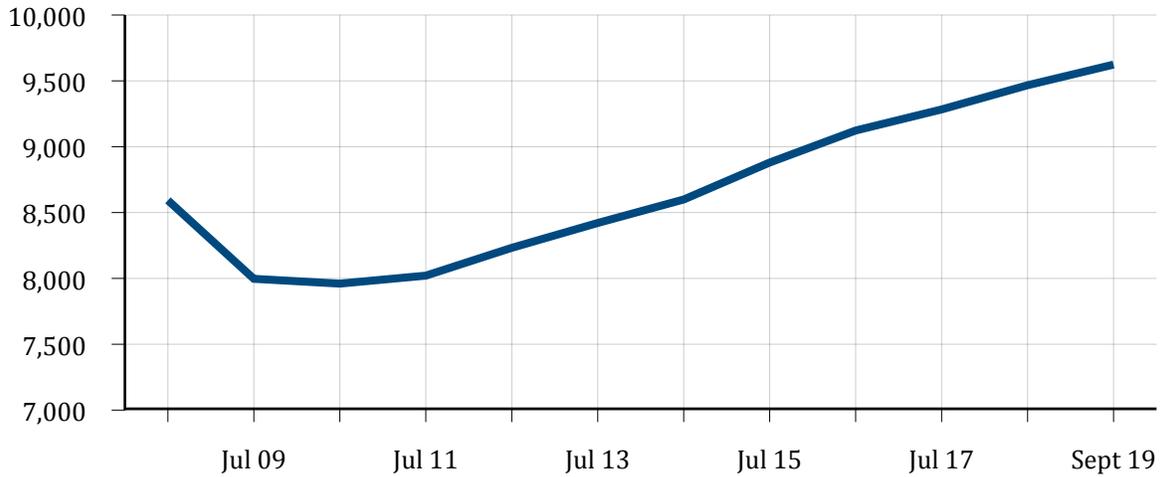
Table 16. Unemployment Rates

| | 2000 | 2006 | 2010 | 2017 | 2018 | Sept 18 | Sept 19 |
|-----------------------|------|------|-------|------|------|---------|---------|
| Los Angeles County | 5.4% | 4.8% | 12.5% | 4.8% | 4.7% | 4.7% | 4.5% |
| Orange County | 3.5% | 3.4% | 9.7% | 3.5% | 2.9% | 2.8% | 2.4% |
| Riverside County | 5.4% | 5.0% | 13.8% | 5.2% | 4.4% | 4.3% | 3.8% |
| San Bernardino County | 4.8% | 4.8% | 13.5% | 4.9% | 4.0% | 3.8% | 3.3% |
| San Diego County | 3.9% | 4.0% | 10.8% | 4.0% | 3.3% | 3.1% | 2.7% |
| Ventura County | 4.5% | 4.3% | 10.8% | 4.5% | 3.8% | 3.7% | 3.2% |
| United States | 4.0% | 4.6% | 9.6% | 4.4% | 3.9% | 3.7% | 3.5% |
| State of California | 4.9% | 4.9% | 12.2% | 4.8% | 4.2% | 4.1% | 4.0% |

Source: U.S. Bureau of Labor Statistics and EED; U.S. and California estimates for August are seasonally adjusted.

The Six County Area moved from substantial job losses during the recession to sustained job growth over the past 7 years. (See the figure below). The Six County Area has outpaced the nation in job growth since the beginning of 2013. By September 2019 job levels were 904,400 or 10.4% above the pre-recession peak level in July 2007.

Six County Area Jobs (Thousands)

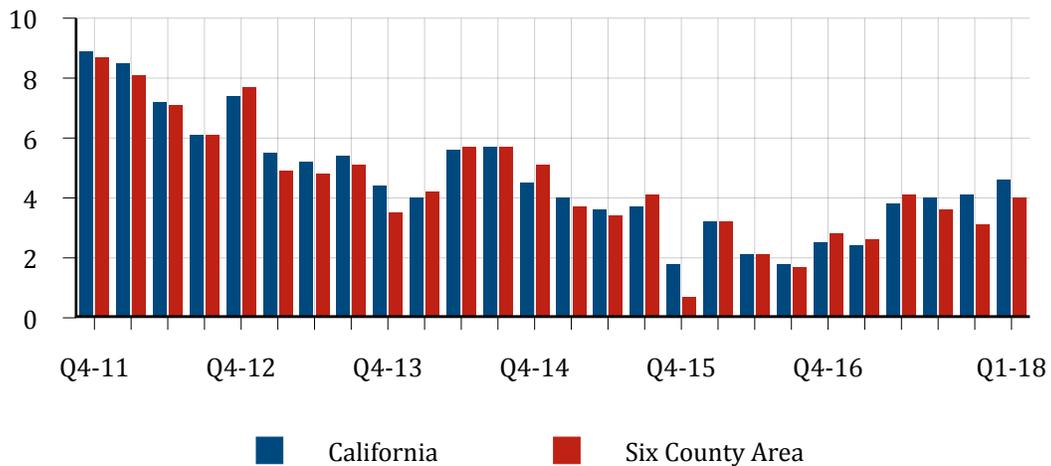


Source: EDD; data are seasonally adjusted

Taxable Sales and Income

Taxable sales in the Six County Area increased by 4.9% in 2014, 2.8% in 2015, 2.4% in 2016 and 3.4% in 2017 though the rate of gain declined in the last two quarters of 2017 as shown below. The Six County Area accounts for 55% of statewide taxable sales and future results are forecast to reflect the pattern of statewide gains. Taxable sales have grown more slowly than personal income as a higher share of spending is on services and other non-taxable items. The data below go only through Q1-2018 so do not reflect events in the past 18 months.

Change in Taxable Sales From Year Earlier



Source: California Board of Equalization

Taxable sales in the Six County Area have rebounded from 2010 levels and all the recession losses have been recovered, helping local government revenues. Taxable sales rose faster than inflation in all counties in each year since 2010. Taxable sales in the Six County Area increased in 2017 by 3.4% while the consumer price index increased by 2.8%.

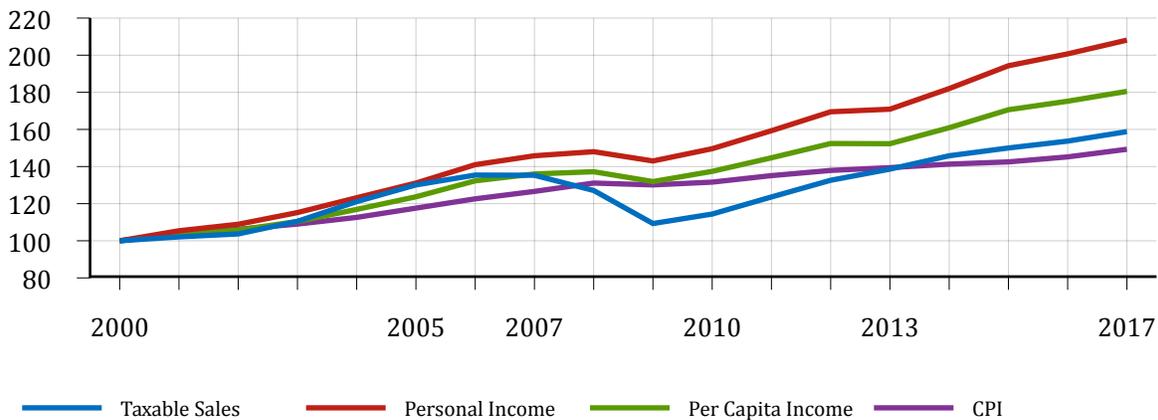
Table 17. Taxable Sales (Dollars in Billions)

| | 2000 | 2006 | 2010 | 2016 | 2017 | % Change 2000-17 | % Change 2006-17 |
|--|----------------|----------------|----------------|----------------|----------------|---------------------|---------------------|
| Los Angeles County | \$106.7 | \$136.2 | \$116.9 | \$154.2 | \$159.3 | 49% | 17% |
| Orange County | 44.5 | 57.2 | 47.7 | 62.5 | 64.6 | 45% | 13% |
| Riverside County | 17.0 | 29.8 | 23.2 | 34.2 | 36.1 | 112% | 21% |
| San Bernardino County | 18.9 | 31.3 | 24.7 | 37.0 | 38.1 | 102% | 22% |
| San Diego County | 36.2 | 47.8 | 41.6 | 55.4 | 57.0 | 57% | 19% |
| Ventura County | 9.1 | 12.3 | 10.2 | 13.7 | 13.9 | 53% | 13% |
| Total Six County Area | \$232.4 | \$314.6 | \$264.3 | \$357.0 | \$369.0 | 59% | 17% |
| Los Angeles Area Consumer Price Index (1982-84=100.0) | 171.6 | 210.4 | 225.9 | 249.2 | 256.2 | 49% | 22% |

Source: Taxable Sales-California Board of Equalization, Consumer Price Index-U.S. Bureau of Labor Statistics

Total personal income reached a record \$1.23 trillion in 2017 in the Six County Area. Per capita personal income reached a record level of \$55,188 in 2017 and the gain in per capita income between 2000 and 2017 now far exceeds the increase in consumer prices. Taxable sales growth kept pace with total income growth through 2005 but has lagged far behind income for the period since 2000 although it has exceeded the increase in consumer prices as shown below. The growth in income and taxable sales is expected to outpace the increase in consumer prices for most future years.

Growth in Taxable Sales, Income and Consumer Prices in Six County Area



Sources: California Board of Equalization, U.S. Bureau of Economic Analysis and U.S. Bureau of Labor Statistics

Construction Activity

Residential building permit levels in the Six County Area declined sharply after 2004 falling from 108,322 to 17,932 units in 2009. Permit levels have rebounded since 2009 reaching 59,444 in 2017 and 56,400 units in 2018. Permit levels are down 11% for the first nine months of 2019 compared to 2018. Multi-family residential permits are the majority in Los Angeles, Orange and San Diego counties while most permits in Riverside and San Bernardino are for single family homes. Projected long-term job and population growth will support a much higher level of residential construction than is currently occurring. State and regional policies that would make housing easier to build are under discussion.

Table 18. Residential Building Permits

| County | 2004 | 2009 | 2016 | 2017 | 2018 | Jan-Sept 2018-19 |
|-----------------------|----------|---------|----------|----------|--------|---------------------|
| Los Angeles | 26,395.0 | 5,653.0 | 20,369.0 | 22,479.0 | 23,222 | (14%) |
| Orange | 9,322 | 2,200 | 12,134 | 10,294 | 8,105 | 8% |
| Riverside | 34,226 | 4,190 | 6,701 | 7,335 | 9,168 | (13%) |
| San Bernardino | 18,470 | 2,495 | 3,872 | 6,831 | 5,086 | (5%) |
| San Diego | 17,306 | 2,990 | 10,100 | 1,016 | 9,570 | (23%) |
| Ventura | 2,603 | 404 | 1,663 | 2,489 | 1,249 | 14% |
| Total Six County Area | 108,322 | 17,932 | 54,839 | 59,444 | 56,400 | (11%) |

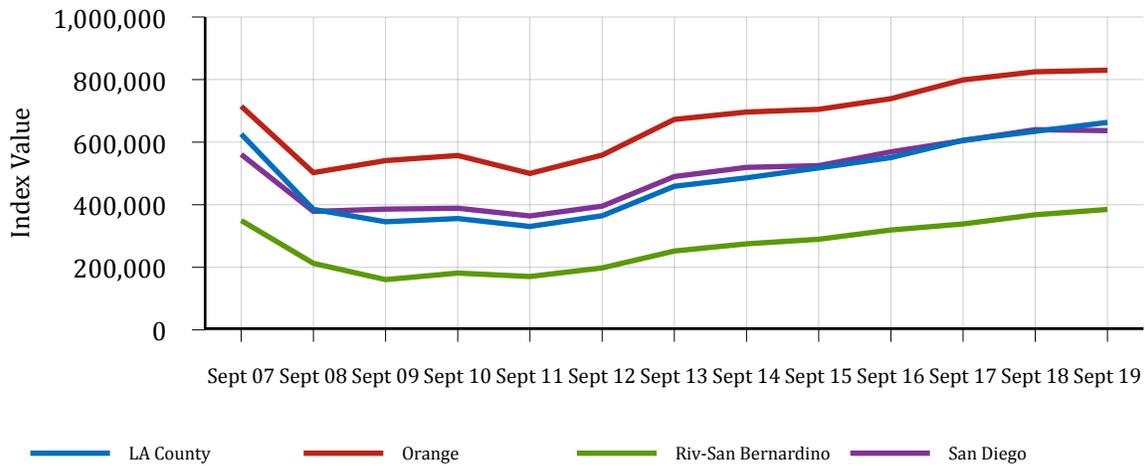
Source: Construction Industry Research Board and California Homebuilding Foundation

Housing Trends in the Six County Area Economy

The housing market recovery that began in 2012 has continued into 2019. Housing prices increased, the number of new residential building permits rose and the number of new foreclosure filings declined. Mortgage rates have declined in recent months and remain relatively low historically and the number of homes in the unsold inventory is low by historic standards according to the California Association of Realtors (CAR).

Median resale housing prices in Six County Area markets have risen substantially in recent years though the rate of increase has slowed recently. In the seven years ending September 2019 median resale prices rose 82% in Los Angeles County, 49% in Orange County, 94% in Riverside-San Bernardino County area and 61% in San Diego County and are exceeding or nearing pre-recession levels. (See the figure on the following page).

Median Resale Housing Prices

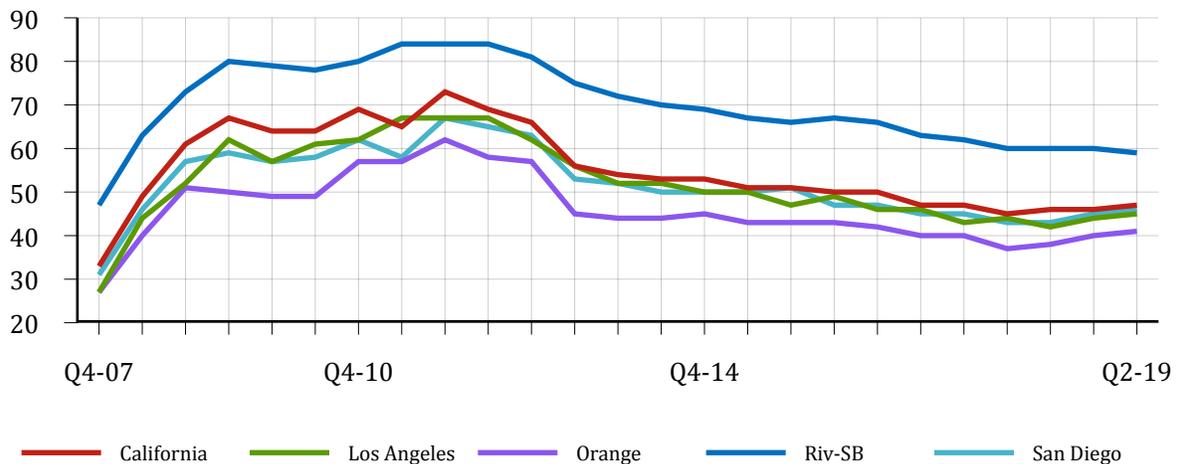


Source: California Association of Realtors

The rise in home prices has led to a decline in housing affordability for first-time homebuyers throughout the Six County Area since 2014 as measured by CAR. Affordability inched up in Q2-2019 in all areas except Riverside-San Bernardino counties.

The long-term demand for housing based on job and population growth remains well above current levels according to projections from SCAG, SANDAG and CCSCE.

First-Time Buyer Affordability Index



Source: California Association of Realtors

Nonresidential Construction

Nonresidential construction permit levels reached a record \$15.6 billion in 2018, up 16% over 2017 levels. Permit levels are down 9% in the first nine months of 2019 compared to a year earlier.

The largest gains in 2018 were in Los Angeles, Orange and Riverside counties. All counties except San Bernardino have surpassed pre-recession 2007 levels and the regional total is up nearly 40% since 2007. Public construction, not shown in the table below, has also increased. The increase in residential, nonresidential and public construction is supporting job growth in construction and related industries.

Table 19. Total Nonresidential Construction Permit Valuation (Dollars in Billions)

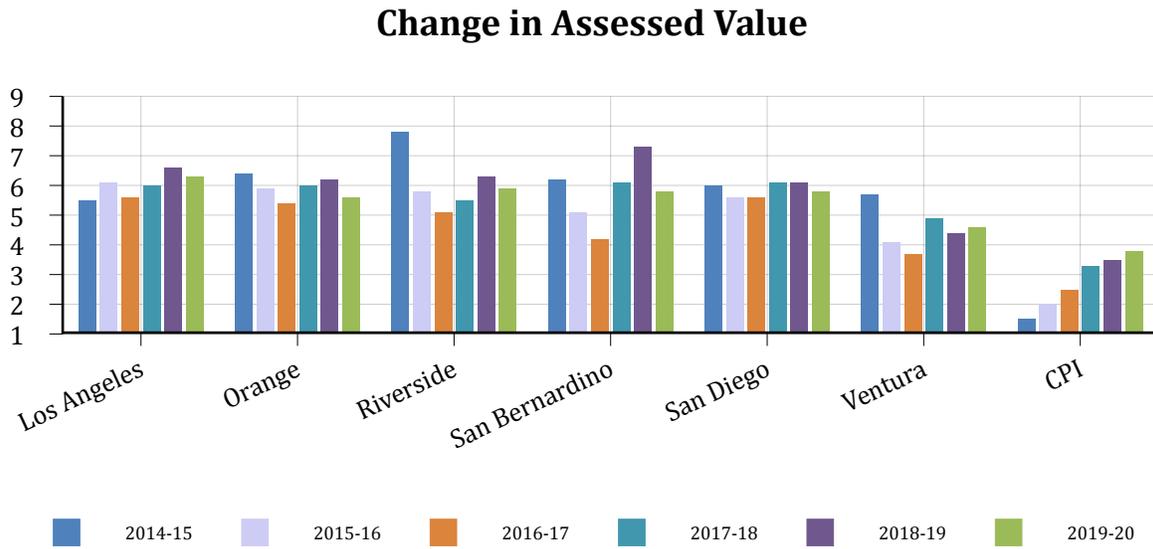
| County | 2007 | 2009 | 2016 | 2017 | 2018 | Jan-Sept 2018-19 |
|-----------------------|------|------|------|------|------|---------------------|
| Los Angeles | 4.7 | 2.7 | 5.3 | 6.0 | 6.7 | (14%) |
| Orange | 2.0 | 1.0 | 2.5 | 2.1 | 3.5 | (22%) |
| Riverside | 1.5 | 0.4 | 1.3 | 1.4 | 2.0 | (18%) |
| San Bernardino | 1.4 | 0.3 | 1.0 | 1.3 | 1.1 | 21% |
| San Diego | 1.4 | 0.6 | 1.8 | 2.4 | 1.9 | 26% |
| Ventura | 0.3 | 0.2 | 0.2 | 0.2 | 0.4 | (42%) |
| Total Six County Area | 11.3 | 5.1 | 12.1 | 13.4 | 15.6 | (9%) |

Source: Construction Industry Research Board and California Homebuilding Foundation

Assessed Valuation

Assessed valuation in the Six County Area has rebounded and outpaced inflation in recent years after a long downturn during the last recession that was another source of fiscal pressure on local communities throughout the Six County Area. Assessed values increased again for the 2019-20 fiscal year with gains ranging from 4.6% in Ventura County to 6.3% in Los Angeles compared to a 3.6% increase in the Consumer Price Index (CPI) (See figure below). For seven years in a row assessed valuation growth has outpaced inflation in each county in the Six County Area.

Figure 20. Change in Assessed Value

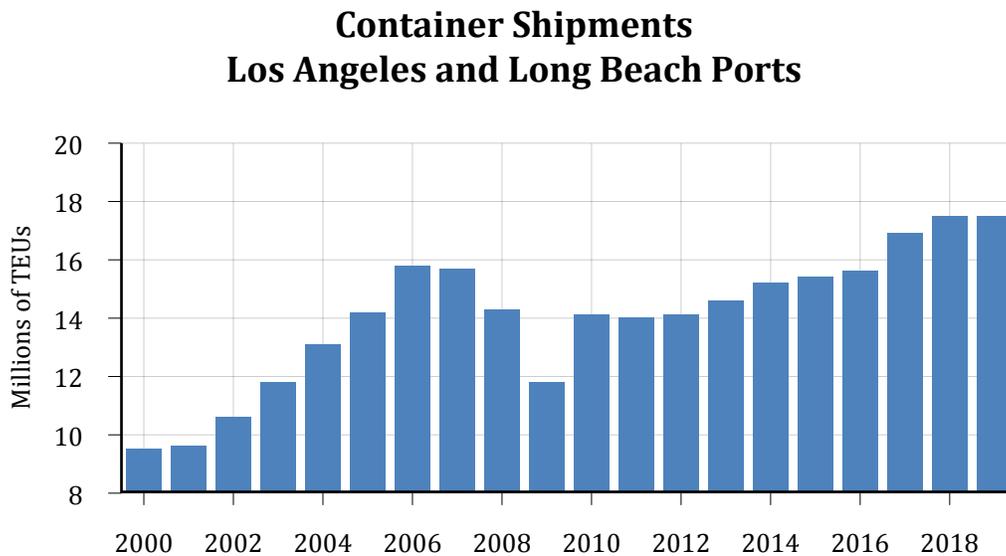


Source: County Assessor's Offices

International Trade

The recession led to a decline in the dollar volume and physical volume of international trade in the Six County Area after 2006. Container volumes have recovered since 2009 and reached record levels in 2018, up 3.7% over 2017 levels. Tariff increases and slowing world growth resulted in no trade growth in 2019 through September.

Figure 21. Container Shipments (Los Angeles and Long Beach Ports)



Source: Ports of Los Angeles and Long Beach

Over the longer term, international trade has been a leading growth sector in the Six County Area. Container volume rose 84% between 2000 and 2018 despite the large drop in 2008 and 2009. Trade volume increased by 6.1% in 2018 to \$619.9 billion including \$545.9 billion in the Los Angeles Customs District leading all U.S. ports, and \$74.0 billion in the San Diego Customs District. This growth supports jobs and economic activity in the transportation, wholesale trade and warehousing industries as the Six County Area is a gateway for U.S. trade with Pacific Rim countries. For example in the Riverside-San Bernardino metro area where many imports are stored and shipped from saw an increase in warehousing jobs from 16,500 to 64,900 between 2007 and 2018 occurred, along with 13,000 jobs added in trucking and wholesale trade with all three sectors exceeding pre-recession job levels.

Long-term growth in the United States and in its trading partners can boost international trade levels of activity in the coming years as will new trade agreements. The outlook for foreign trade expansion particularly with China and Mexico has become uncertain with the election results and the campaign statements of the new President about foreign trade agreements.

Income, Wages and Poverty Rates

Counties in the Six County Area have income and wage levels and poverty rates that range from below the national average to above the national average. Orange and Ventura counties have the highest household income levels within the Six County Area. Orange and Ventura counties have the highest household income levels within the Six County Area. Los Angeles, Orange and San Diego counties have the highest wage levels, well above the national average. San Diego County income and wage levels are also above the national average. Riverside and San Bernardino counties have per capita income and wage levels that are below the national average. Median household income in 2018 was above the national average in each of the counties in the Six County Area.

Per capita income and median household income measures are affected by demographic trends. Per capita income measures in the region are pushed downward by the above average percent of children in the Six County Area population compared to the national average, while median household income measures are pushed upward by the above average number of wage earners per household in the Six County Area. Income and wage trends in the Six County Area have been comparable to national trends since 2000. Poverty rates exceed the national average in 2017 in Los Angeles and San Bernardino counties and were below the national average elsewhere in the Six County Area.

Per capita income is based on total personal income divided by population while median household income is based on money income, which is lower than total personal income. The table below shows median household income, per capita income, wage levels and poverty rates for each of the counties in the Six County Area, as well as for California and the United States, in 2018.

Income and poverty levels improved in 2018 throughout the Six County Area (See table below). Median household income grew faster than inflation in all counties except Ventura. Average wage growth lagged the nation in 2018 in most counties and grew more slowly than inflation except in Los Angeles and San Diego counties. Poverty rates fell throughout the Six County Area although these rates do not take into account the rapid rise in rents and home prices throughout the Six County Area.

Table 22. Income and Wages

| | Per Capita Income | Median Household Income | Average Wage | Poverty Rate |
|-----------------------|-------------------|-------------------------|--------------|--------------|
| Los Angeles County | 62,224 | 68,093 | 64,921 | 14.1% |
| Orange County | 69,268 | 89,759 | 62,414 | 10.5% |
| Riverside County | 40,637 | 66,964 | 45,097 | 12.7% |
| San Bernardino County | 40,316 | 63,857 | 46,906 | 14.9% |
| San Diego County | 61,386 | 79,079 | 61,926 | 11.4% |
| Ventura County | 61,712 | 84,566 | 55,235 | 8.9% |
| California | 63,557 | 75,277 | 68,478 | 12.8% |
| United States | 54,446 | 61,937 | 57,266 | 13.1% |

Source: Per Capita Income - U.S. Department of Commerce; Median Household Income and Poverty Rate-U.S. Census Bureau (American Community Survey); Average Wage-U.S. Bureau of Labor Statistics

Table 23. Change in Income and Wages 2017-18

| | Per Capita Income | Median Household Income | Average Wage | Poverty Rate |
|-----------------------|-------------------|-------------------------|--------------|--------------|
| Los Angeles County | 5.4% | 4.7% | 3.1% | (0.8%) |
| Orange County | 5.4% | 4.1% | 1.7% | (1.0%) |
| Riverside County | 4.3% | 4.7% | 2.3% | (0.2%) |
| San Bernardino County | 4.3% | 5.7% | 2.8% | (1.3%) |
| San Diego County | 5.7% | 3.8% | 3.4% | (0.4%) |
| Ventura County | 5.0% | 2.1% | 1.5% | (0.4%) |
| California | 5.7% | 4.8% | 4.0% | (0.5%) |
| United States | 4.9% | 2.7% | 3.4% | (0.3%) |

Source: Per Capita Income-U.S. Department of Commerce; Median Household Income and Poverty Rate-U.S. Census Bureau (American Community Survey); Average Wage-U.S. Bureau of Labor Statistics

Population

Population growth in California and the Six County Area has been slowing since 2000 compared with previous decades. Population growth averaged 174,100 per year between 2000 and 2010 compared to 219,300 between 1990 and 2000. Population growth slowed after 2005 as high housing prices and large job losses contributed to larger levels of out-migration to other areas of California and other states.

Population growth averaged 160,000 between 2010 and 2018 according to the DOF estimates, growth slowed in the past three years. The Six County Area had 22.3 million residents in 2018, approximately 56% of the State's population.

Table 24. Six County Area Population (in Thousands)

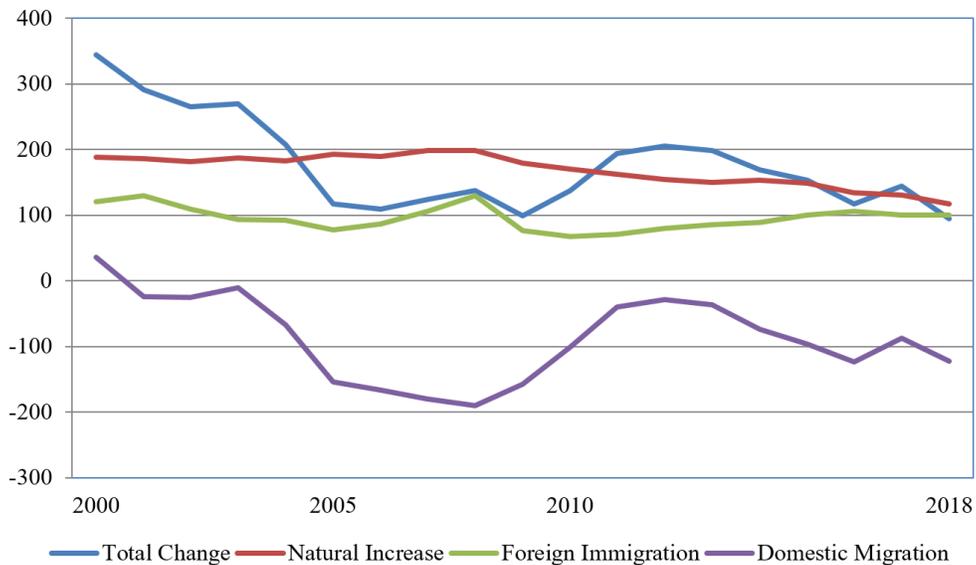
| County | 1990 | 2000 | 2005 | 2010 | 2016 | 2017 | 2018 |
|-----------------------|---------|---------|---------|---------|--------|----------|--------|
| Los Angeles | 8,860.0 | 9,544.0 | 9,810.0 | 9,837.0 | 10,215 | 10,262.0 | 10,279 |
| Orange | 2,412 | 2,854 | 2,957 | 3,015 | 3,182 | 3,206 | 3,217 |
| Riverside | 1,188 | 1,557 | 1,935 | 2,196 | 2,362 | 2,393 | 2,420 |
| San Bernardino | 1,432 | 1,719 | 1,943 | 2,044 | 2,145 | 2,164 | 2,178 |
| San Diego | 2,505 | 2,828 | 2,970 | 3,100 | 3,297 | 3,320 | 3,344 |
| Ventura | 669 | 757 | 797 | 824 | 854 | 855 | 855 |
| Total Six County Area | 17,066 | 19,259 | 20,412 | 21,016 | 22,055 | 22,199 | 22,294 |

Source: California Department of Finance as of July 1

Six County Area population growth is determined by three major components-natural increase, which is the number of births minus the number of deaths, net foreign immigration, which is the number of people moving to the region from abroad minus the number moving abroad, and net domestic migration, which is the number of people moving from other regions of the state and nation minus the number moving out to these areas. Natural increase was the largest component of population growth from 2000 through 2018 averaging near 169,000 per year. Declining birth rates in recent years have reduced natural increase to near 117,000 in 2018.

Net foreign immigration has averaged 96,000 per year since 2000 while net domestic migration has been negative since 2000 averaging -87,000 per year. Foreign immigration declined during the recession but has rebounded to more than 100,000 per year since 2015. Net out migration is still negative but at lower levels than during the recession.

Components of Change in Six County Area Population (Thousands)



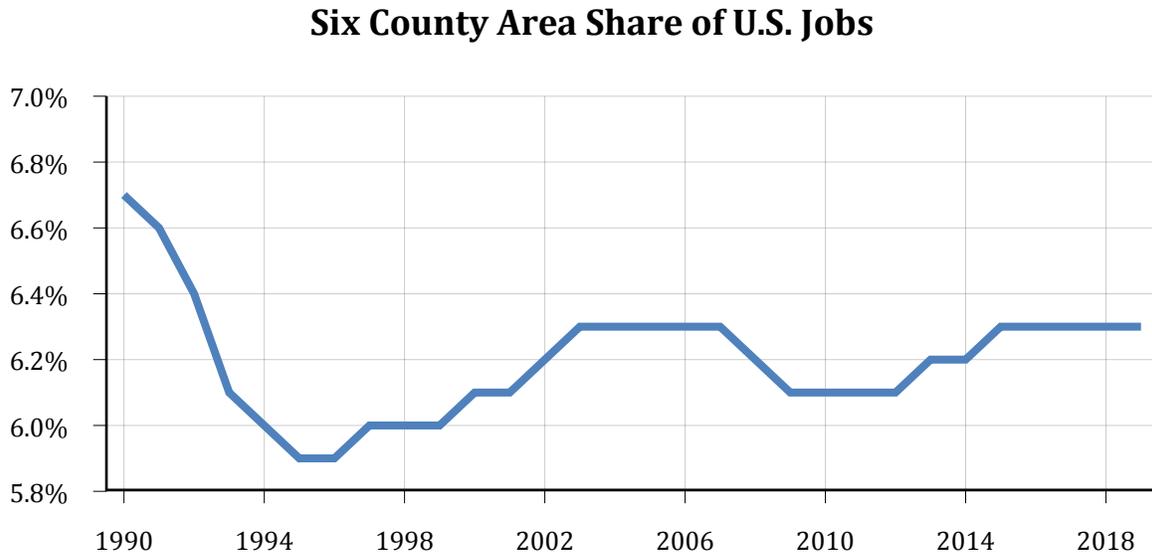
Source: California Department of Finance as of July 1

Population projections for 2040 for the Six County Area from DOF show expected population growth of approximately 3.5 million for the Six County Area, an increase of 16% between 2015 and 2040. This is lower than their previous projection of an 18% increase as a result of falling birth rates.

Economic Structure of the Six County Area and Long-Term Prospects

The Six County Area has steadily increased its share of national jobs in recent years. In September 2019 the Six County Area accounted for 6.3% of the nation's non-farm wage and salary jobs, close to the pre-recession highs. The Six County Area economy usually outpaces the nation in growth periods and lags behind in recessions as in the periods after 1990 and 2007.

Figure 25. Six County Share of US Jobs



Source: EDD; data are seasonally adjusted

In 2018 Education and Health Services was the largest major industry sector in the Six County Area measured by jobs, with just fewer than 1.5 million jobs or almost 16% of the Six County Area total (see the table on the following page).

The next largest sectors in 2018 were Professional and Business Services and Government followed by Leisure and Hospitality, Retail Trade and Manufacturing. Three sectors accounted for 60% of the job growth since 2010: Educational and Health Services, Leisure and Hospitality, and Professional and Business Services. Six County Area job levels in 2018 were more than 750,000 above 2007 levels despite large losses in Manufacturing and smaller declines in other sectors. Between 2010 and 2018 the Six County Area added more than 1.5 million jobs.

Since 2010 most sectors have seen job growth. Construction jobs have rebounded but are still below pre-recession levels. There was strong growth in Professional and Business Services reversing all of the recession job losses. Wholesale Trade activity also rebounded along with port traffic and the growing economy. Financial Services and Information recovered only a small portion of recession job losses.

Long-term job growth is driven by the Six County Area's economic base—those sectors that sell most of their goods and services in national and world markets outside of the Six County Area. Recent projections by CCSCE, SCAG and SANDAG report that the Six County Area will see job growth that slightly exceeds the national average during the next 10 to 30 years, led by gains in Professional and Business Services, Wholesale Trade, Information and the tourism component of Leisure and Hospitality.

Table 26. Six County Area Employment by Major Sector (Jobs in Thousands)

| | 2000 | 2007 | 2010 | 2018 | Change 2007 - 2010 | Change 2010 - Nov 2018 |
|------------------------------------|---------|---------|---------|---------|-----------------------|---------------------------|
| Farm | 67.7 | 63.8 | 59.8 | 54.3 | -4.0 | -5.0 |
| Natural Resources and Mining | 6.3 | 7.8 | 7.3 | 4.8 | -0.4 | -1.2 |
| Construction | 374.0 | 479.0 | 298.9 | 457.9 | -180.0 | 158.9 |
| Manufacturing | 1,114.1 | 888.9 | 735.8 | 743.7 | -150.9 | 6.3 |
| Wholesale Trade | 387.5 | 430.0 | 382.4 | 424.7 | -46.6 | 45.2 |
| Retail Trade | 835.5 | 948.6 | 849.5 | 946.8 | -98.6 | 95.4 |
| Transp, Warehousing and Utilities | 286.8 | 298.0 | 274.8 | 404.6 | -24.3 | 124.5 |
| Information | 344.1 | 293.6 | 260.6 | 284.3 | -34.0 | 26.0 |
| Financial Activities | 449.2 | 524.0 | 442.5 | 478.2 | -81.3 | 35.2 |
| Professional and Business Services | 1,178.0 | 1,286.8 | 1,134.6 | 1,377.7 | -153.4 | 244.3 |
| Educational and Health Services | 831.0 | 1,097.0 | 1,201.0 | 1,546.7 | 106.2 | 342.2 |
| Leisure and Hospitality | 740.7 | 897.2 | 861.0 | 1,164.5 | -36.0 | 305.5 |
| Other Services | 271.2 | 293.9 | 272.4 | 321.2 | -21.5 | 48.8 |
| Government | 1,171.1 | 1,245.8 | 1,240.9 | 1,302.4 | -4.9 | 61.5 |
| Total Wage and Salary Jobs | 8,057.2 | 8,754.4 | 8,021.5 | 9,512.3 | -729.7 | 1,487.6 |

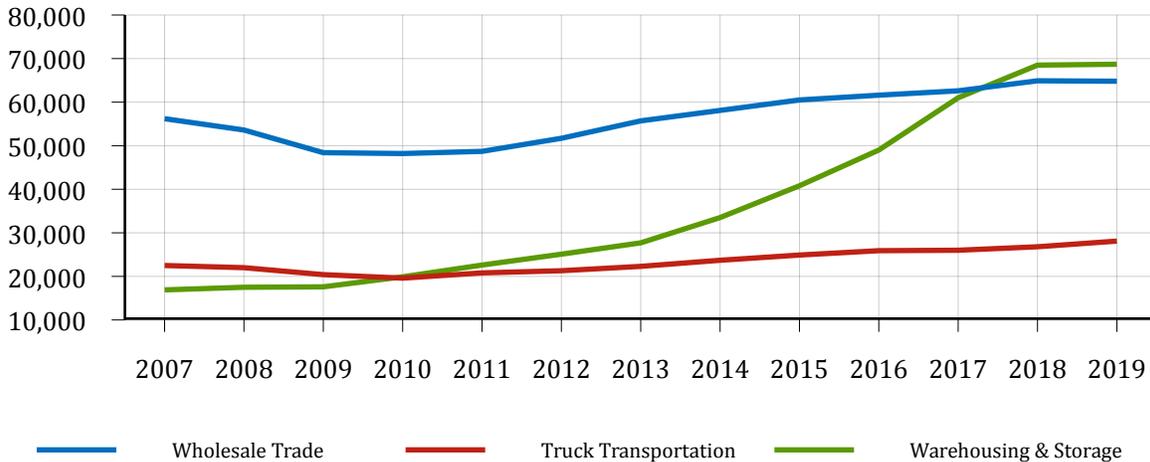
Source: EDD

The Six County Area economy has an economic base that is diversified and well positioned to participate in U.S. and world economic growth over the next ten years. Job levels are expected to grow in the high-wage and fast-growing professional, scientific, technical and information services sectors, which include architecture, design, computer, research and development, advertising, legal, accounting, and Internet-related and management services. Other fast-growing sectors over the next ten years include entertainment and tourism industries and health care.

The Six County Area has an above-average share of four additional fast-growing sectors—Wholesale Trade and Transportation, tied to the area’s projected growth in foreign trade; Information, which includes motion pictures; and the tourism component of Leisure and Hospitality, tied to growth in disposable income in the U.S. and worldwide.

The expansion of foreign trade and the growth of distribution centers such as Amazon in the Inland Empire have contributed to a surge in logistics (wholesale trade, warehouse and trucking) jobs in the Riverside-San Bernardino metro area. (See figure on the following page). Between 2007 and 2018 these jobs increased by 64,600 or 68%. The imposition of tariffs has slowed growth in 2019.

Logistics Jobs in the Riverside-San Bernardino Metro Area



Source: EDD

The diversity of the Six County Area economy has led to GDP growth since that slightly exceeded the national average in 2017. Average GDP growth in nominal dollars in 2017 was 4.5% and real GDP growth was 2.1% for the nation and 3.0% for the state. In 2017 the Six County Area GDP was just short of \$1.5 trillion.

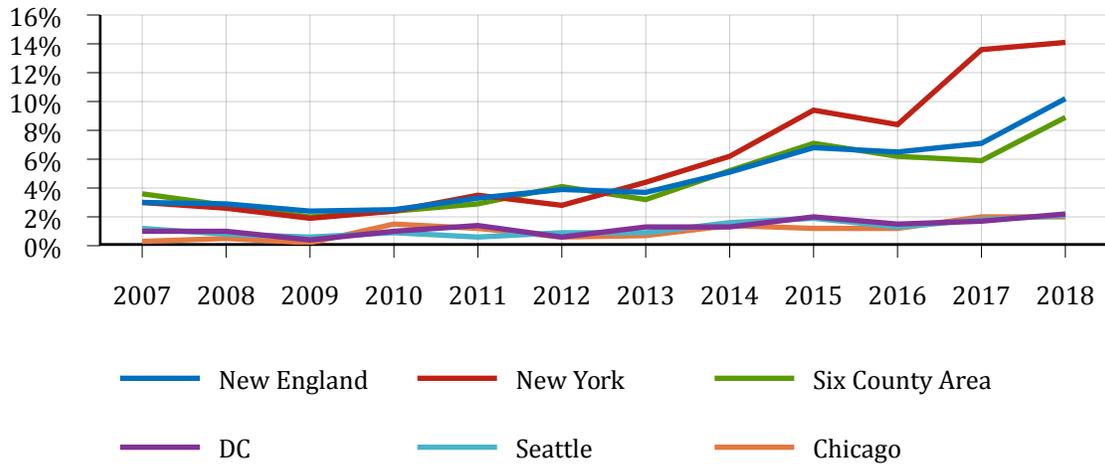
Table 27. Six County Area GDP (Billions of Current Dollars)

| Metro Area | | | | Average Annual Growth Rate | |
|-----------------|---------|---------|---------|----------------------------|--------------------|
| | 2015 | 2016 | 2017 | Current \$ 2016-17 | Real \$ 2016-17 |
| LA-Orange | 967.1 | 996.4 | 1,043.7 | 4.7% | 2.8% |
| Ventura | 49.7 | 49.9 | 50.8 | 1.8% | (0.4%) |
| Riv.-San Bern. | 144.1 | 150.6 | 157.9 | 4.9% | 2.9% |
| San Diego | 211.8 | 223 | 231.8 | 4.0% | 2.2% |
| Six County Area | 1,372.7 | 1,419.9 | 1,484.4 | 4.5% | 2.6% |

Source: U.S. Department of Commerce; 2017 estimates are preliminary

The Bay Area is by far the largest recipient of new venture capital (VC) funding with \$60.9 billion in 2018 funding. The Six County Area has been one of the top three VC markets behind the Bay Area for the past decade, outpacing the Chicago, Seattle and Washington, DC areas in total funding (see the figure below). In 2018 the Six County Area accounted for \$8.9 (a record high VC funding level) behind New York metro and New England. In the first three quarters of 2019 Six County Area funding was up 31% passing New England for that period.

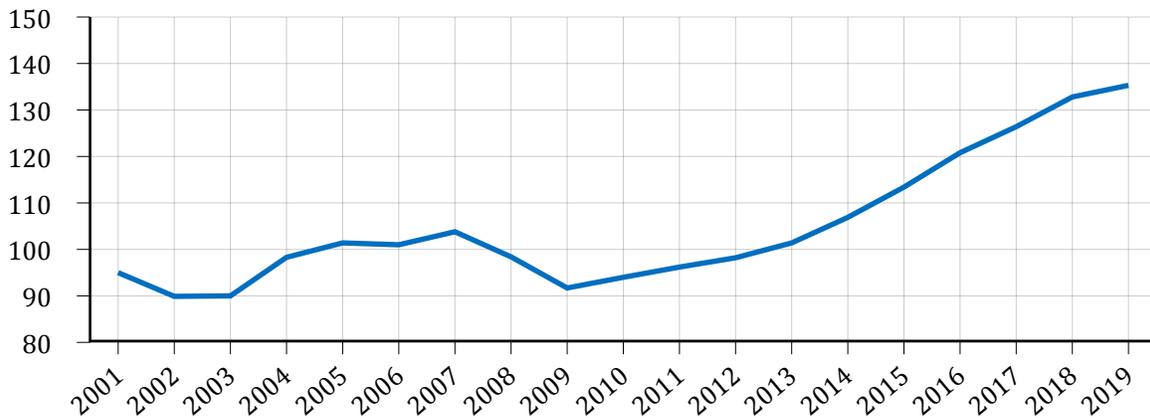
VC Funding (\$Billions)



The motion picture and tourism sectors are two major components of the Six County Area economic base. Film LA reports an increase in the number of filming shoot days since 2010. (See the chart on the following page) However, the mix of production days changed over time with long-term losses in the production of major feature films (though levels have been flat since 2010) and TV drama series offset by larger gains in commercials, other kinds of TV filming and web-based and reality shows, which according to Film LA have lower dollar values per production day of activity. In September 2014 California approved an increase in the state film tax credit to \$330 million per year from \$100 million starting in 2015. Production days increased in 2018 and set a recent record in 2016 or 39,627 production says. Production levels in 2018 were the second highest in recent history.

California and the Six County Area are experiencing growth in both domestic and foreign visitors. Hotel rates and occupancy are increasing in the Six County and the same is true for employment in the hotel and amusement park sectors. In 2018 Los Angeles County set tourism records for the fourth year in a row for visitors, 50 million up 3.1% over 2017, according to data from the Los Angeles Tourism and Convention Board. Foreign travel to the region surged with gains of 6.9% for China, 4.5% or Canada and 3.0% for the UK. In 2018 passenger travel at Los Angeles International Airport was up 3.5% to 87.57 million trips to set an all-time record. Air passenger travel at the major airports in the Six County Area reached record levels in 2018 and is up 1.9% through August 2019 to 135.3 million trips led by gains at Burbank, Ontario and San Diego airports. (see chart below).

Passengers at Major Airports in the Six County Area



Source: Airport websites-Los Angeles International, Burbank, John Wayne, Ontario and San Diego

The positives for long-term economic growth include the strength of the region as a center for knowledge-based and creative activities and international trade, tourism and investment with the Pacific Rim. For example, the Six County Area does not have a large number of automotive industry production jobs but nearly all large worldwide auto companies have a major design studio in the Six County Area.

Risks for the Long-Term Forecast

Housing and transportation challenges pose risks to the long-term economic competitiveness and quality of life in the Six County Area. Recent housing shortages have contributed to relatively large increases in home prices and rents. If more housing is not built, continuing increases in housing costs could affect location decisions of firms and families.

The state Department of Housing and Community Development has recently released the Regional Housing Needs Assessment (RHNA) goals for SCAG and SANDAG. The total goal for the Six County Area for the period from 2021 to 2029 is 1.5 million units or nearly three times the recent annual permit levels. More than half of the units are for residents making less than 120% of the area median income. Roughly half of the units are to make up for current shortages and half for projected growth.

In the past three years, the State legislature passed housing legislation to ease development restrictions and to set aside money for subsidized housing. In 2020, the State legislature will consider additional legislation that will make it easier to build housing at all income levels with special attention on housing barriers in jurisdictions that are not meeting the housing targets in their plans.

In addition, the Six County Area needs substantial transportation investment, at least \$500 billion to 2040, to serve the growing number of residents and businesses. The two major planning agencies serving the Six County Area, SANDAG and SCAG, have plans to address these housing and transportation challenges but they require cooperation from local jurisdictions in siting housing and funding for both transportation and below market housing projects in addition to state and local laws that reduce barriers to and costs of building housing and transportation improvements.

The Six County Area economy is connected to the national and world economies, especially the Pacific Rim, and is subject to fluctuations and changes in long-term demographic trends around the world and changes in national policies that affect the economy.

Two new potential challenges emerged in 2018 and continue today. The federal administration is implementing tariff increases that are prompting retaliation and a potential decline in foreign trade, which is one of the key sectors

in the Six County Area economy. In addition changes to federal immigration policy that could reduce the number of immigrants allowed into the country are under consideration. The Six County Area economy has a far above average share of immigrants in the work force at all skill levels and reductions in immigration could have a detrimental effect on the economy in the Six County Area.

Trade and immigration policies also pose risks for future U.S. economic growth. Restricting immigration would come at a time when baby boomer retirements will slow labor force growth and remove experienced workers from the workforce. As of October 2019 new trade and immigration policies are still being negotiated.

FINANCIAL POWERS (MWD ACT)

THE METROPOLITAN WATER DISTRICT ACT

Sec. 18. [Fiscal Year]

The fiscal year of any metropolitan water district shall commence on the first day of July of each year and shall continue until the close of the 30th day of June of the year following.

Sec. 61. [Ordinances, Resolutions and Orders]

The board may make and pass ordinances, resolutions and orders necessary for the government and management of the affairs of the district, for the execution of the powers vested in the district and for carrying into effect the provisions of this act.

Amended by Stats. 1969, ch. 441

Sec. 123. [Borrowing, Limitation]

A district may borrow money and incur indebtedness and issue bonds or other evidence of such indebtedness, except that no district shall incur indebtedness which, in the aggregate, shall exceed 15 percent of the assessed valuation of all the taxable property included within the district, as shown by the assessment records of the county or counties.¹

CASE NOTE

A contract between the State and a metropolitan water district for a water supply from the State Water Resources Development System was a contract for the furnishing of continued water service in the future, payments by the district being contingent upon performance of contractual duties by the State and not incurred at the outset, so the district did not incur an indebtedness in excess of that permitted by former Section 5(7) of the Metropolitan Water District Act (now Sec. 123).

Metropolitan Water District v. Marquardt, 59 Cal.2d 159, 28 Cal. Rptr. 724 (1963)

Sec. 124. [Taxes, Levy and Limitation]

A district may levy and collect taxes on all property within the district for the purposes of carrying on the operations and paying the obligations of the district, except that such taxes, exclusive of any tax levied to meet the bonded indebtedness of such district and the interest thereon, exclusive of any tax levied to meet any obligation to the United States of America or to any board, department or agency thereof, and exclusive of any tax levied to meet any obligation to the state pursuant to Section 11652 of the Water Code, shall not exceed five cents (\$.05) on each such one hundred dollars (\$100) of assessed valuation. The term "tax levied to meet the bonded indebtedness of such district and the interest thereon" as used in this section shall also include, but shall not be limited to, any tax levied pursuant to Section 287 to pay the principal of, or interest on, bond anticipation notes and any tax levied under the provisions of any resolution or ordinance providing for the issuance of bonds of the district to pay, as the same shall become due, the principal of any term bonds which

¹ The assessed valuation of all taxable property as of June 30, 2011 used in calculating the ad valorem tax limitation was more than \$2 trillion (\$2,050,497,523,732), fifteen percent of this amount is \$307.6 billion (\$307,574,628,560).

under the provisions of such resolution or ordinance are to be paid and retired by call or purchase before maturity with moneys set aside for that purpose.

Amended by Stats. 1969, ch. 441

CASE NOTE

An article in a contract between the State and a metropolitan water district for a water supply from the State Water Resources Development System which article is based upon Water Code Section 11652, requiring the district to levy a tax to provide for all payments due under the contract, does not contravene former Section 5(8) of the Metropolitan Water District Act, imposing a limit on taxation, as Section 11652 is a special provision relating only to taxation to meet obligations from water contracts with state agencies, whereas said Section 5(8) is a general provision relating to taxation by a district for all purposes and the special provision controls the general provision.

Metropolitan Water District v. Marquardt, 59 Cal.2d 159, 28 Cal. Rptr. 724 (1963).

Sec. 124.5. [Ad valorem Tax Limitation]

Subject only to the exception in this section and notwithstanding any other provision of law, commencing with the 1990-91 fiscal year any ad valorem property tax levied by a district on taxable property in the district, other than special taxes levied and collected pursuant to annexation proceedings pursuant to Articles 1 (commencing with Section 350), 2 (commencing with Section 360), 3 (commencing with Section 370), and 6 (commencing with Section 405) of Chapter 1 of Part 7, shall not exceed the composite amount required to pay (1) the principal and interest on general obligation bonded indebtedness of the district and (2) that portion of the district's payment obligation under a water service contract with the state which is reasonably allocable, as determined by the district, to the payment by the state of principal and interest on bonds issued pursuant to the California Water Resources Development Bond Act as of the effective date of this section and used to finance construction of facilities for the benefit of the district. The restrictions contained in this section do not apply if the board of directors of the district, following a hearing held to consider that issue, finds that a tax in excess of these restrictions is essential to the fiscal integrity of the district, and written notice of the hearing is filed with the offices of the Speaker of the Assembly and the President pro Tempore of the Senate at least 10 days prior to that date of the hearing.

Added by Stats. 1984, ch. 271.

Sec. 130. [General Powers to Provide Water Services]

A district may do all of the following:

- (a) Acquire water and water rights within or without the state.
- (b) Develop, store, and transport water.
- (c) Provide, sell, and deliver water at wholesale for municipal and domestic uses and purposes.
- (d) Fix the rates for water, and the amount of any water standby or availability service charge or assessment. Any such water standby or availability service charge or assessment shall be deemed to be amounts paid by the member public agency to the district on tax assessments.
- (e) Acquire, construct, operate, and maintain any and all works, facilities, improvements, and property necessary or convenient to the exercise of the powers granted by this section.

Amended by Stats. 1984, ch. 271.

Sec. 133. [Fixing of Water Rates]

The board shall fix the rate or rates at which water shall be sold. Such rates, in the discretion of the board, may differ with reference to different sources from which water shall be obtained by the district. The board, under conditions and on terms found and determined by the board to be equitable, may fix rates for the sale and delivery to member public agencies of water obtained by the district from one source of supply in substitution for water obtained by the district from another and different source of supply, and may charge for such substitute water at the rate fixed for the water for which it is so substituted.

Sec. 134. [Adequacy of Water Rates; Uniformity of Rates]

The Board, so far as practicable, shall fix such rate or rates for water as will result in revenue which, together with revenue from any water stand-by or availability service charge or assessment, will pay the operating expenses of the district, provide for repairs and maintenance, provide for payment of the purchase price or other charges for property or services or other rights acquired by the district, and provide for the payment of the interest and principal of the bonded debt subject to the applicable provisions of this act authorizing the issuance and retirement of the bonds. Those rates, subject to the provisions of this chapter, shall be uniform for like classes of service throughout the district.

Amended by Stats. 1984, ch. 271

Sec. 134.5. [Water Standby or Availability of Service Charge]

(a) The board may, from time to time, pursuant to the notice, protest, and hearing procedures in Section 53753 of the Government Code, impose a water standby or availability service charge within a district. The amount of revenue to be raised by the service charge shall be as determined by the board.

(b) Allocation of the service charge among member public agencies shall be in accordance with a method established by ordinance or resolution of the board. Factors that may be considered include, but are not limited to, historical water deliveries by a district; projected water service demands by member public agencies of a district; contracted water service demands by member public agencies of a district; service connection capacity; acreage; property parcels; population, and assessed valuation, or a combination thereof.

(c) The service charge may be collected from the member public agencies of a district. As an alternative, a district may impose a service charge as a standby charge against individual parcels within the district.

In implementing this alternative, a district may exercise the powers of a county water district under Section 31031 of the Water Code, except that, notwithstanding Section 31031 of the Water Code, a district may (1) raise the standby charge rate above ten dollars (\$10) per year by a majority vote of the board, and (2) after taking into account the factors specified in subdivision (b), fix different standby charge rates for parcels situated within different member public agencies.

(d) Before imposing or changing any water standby or availability service charge pursuant to this section, a district shall give written notice to each member public agency not less than 45 days prior to final adoption of the imposition or change.

(e) As an alternative to the two methods set forth in subdivision (c), a district, at the option of its board, may convert the charge to a benefit assessment to be levied pursuant to Sections 134.6 to 134.9, inclusive.

Added by Stats. 1984, ch. 271; Amended Stats 2007; ch 27 §49, effective January 1, 2008.

Sec. 239.2. [Limitation on Amount of Revenue Bonds]

No revenue bonds shall be issued under this chapter, except for refunding, unless the amount of equity of the district, 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 to be outstanding following the issuance of such bonds.

Added by Stats. 1972, ch. 169.

FINANCIAL POLICIES (MWD ADMINISTRATIVE CODE)

FINANCIAL POLICIES

§ 2431. Duties and Functions.

The Engineering and Operations Committee shall study, advise and make recommendations with regard to:

- (a) Plans, specifications and bids;
- (b) The initiation, scheduling, contracting, and performance of construction programs and work, and the equipment or materials to be used, replaced, disposed of, or salvaged;
- (c) Such matters as may come to its attention on inspection trips of the aqueduct works which the committee shall make at least once a year;
- (d) The operation, protection, and maintenance of the plants and facilities required for the production, exchange, sale, storage, treatment, and delivery of water and power and for the storage and treatment of water; and for the distribution of electrical energy to the aqueduct pumping plants;
- (e) The providing of storage and distribution facilities and connections for the delivery of water;
- (f) Construction claims;
- (g) Engineering aspects of State Water Project facilities;
- (h) The selection of engineering and geologic consultants and the determination of the scope of their assignments;
- (i) Energy matters in general;
- (j) Water treatment technologies for complying with drinking water regulations;
- (k) Water quality policies and standards;
- (l) Policies regarding the quality of imported, reclaimed, reused and stored water;
- (m) The effect on the District of existing and proposed federal, state, and local water quality statutes and regulations;
- (n) Proposed amendments to the Metropolitan Water District Act and Code affecting the engineering and operations functions of the District and water quality;
- (o) Proposed rules and proposals regarding business development opportunities for intellectual property transactions; and.

(p) The District's Capital Investment Program and appropriations for capital projects.

Organization and Procedures of the Board - July 19, 1976; Sections 211.3.2 amended and paragraph (j) [formerly Section 211.3.2.10] added by M.I. 32924 - September 18, 1979. Section 211.3.2 repealed and Section 2431 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; former paragraph (j) renamed (o), and new paragraphs (j), (k), (l), (m), and (n), added by M.I. 43587 - June 8, 1999; paragraphs (j)-(n) repealed, (o) renumbered to (k) and amended, and new paragraphs (j)-(u) added by M. I. 44582 - August 20, 2001; amended and paragraphs (l)-(u) deleted by M. I. 44745 - January 8, 2002; paragraph (c) - (k) renumbered and amended and new paragraphs (h) - (j) added by M. I. 46983 - February 13, 2007; new paragraphs (d)-(e) and (i)-(l) added, former paragraphs (d)-(f) renamed (f)-(h), former paragraphs (g-j) renamed (n)-(q), paragraphs (n) and (p) amended by M.I. 48081 - November 10, 2009; paragraph (o) deleted, former paragraph (p)-(q) renamed (o)-(p) by M.I. 48624 - April 12, 2011; amended paragraph (p) by M.I. 51417 - December 11, 2018.

§ 4301. Cost of Service and Revenue Requirement.

(a) The District shall fix rates for water such that anticipated water revenues, together with anticipated revenues from any water standby or availability of service charge (such as the readiness-to-serve charge or capacity charge) or assessment, ad valorem tax revenues, and other revenues pay the expenses of the District, provide for repairs and maintenance, provide for payment of the purchase price or other charges for property or services or other rights acquired by the District, and provide for the payment of the interest and principal of the District's outstanding bonded debt. Subject to the foregoing, such rates and charges shall reflect the costs of the District's major service functions, including water supply, conveyance, power, storage, distribution and treatment to the greatest degree practicable.

(b) Notwithstanding the provisions in subsection (a) above, amounts raised by ad valorem property taxation shall not exceed the limitations established by section 124.5 of the Act.

Section 311.2 - M.I. 33007 - November 13, 1979, as clarified by M.I. 33059 - January 15, 1980. Section 311.2 repealed and Section 4301 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended and paragraph (b) added by M.I. 38749 - February 12, 1991; paragraph titled changed and paragraph (a) amended by M. I. 44812 - March 12, 2002; paragraph (a) amended by M. I. 46148 - March 8, 2005; paragraphs (a)-(b) amended by M.I. 49187 - September 11, 2012; paragraphs (a)-(b) amended by M.I. 51417 - December 11, 2018.

§ 4304. Apportionment of Revenues and Setting of Water Rates.

(a) Not later than at its February meeting the General Manager shall present to the Finance and Insurance Committee of the Board:

(1) Determinations of the revenue requirements and cost of service analysis supporting the rates and charges required during the biennial period beginning the following July 1, as determined by the General Manager in accordance with current Board policies, and,

(2) Recommendations of rates including, but not limited to, the System Access Rate, Water Stewardship Rate, System Power Rate, Treatment Surcharge, and the Supply Rates for the various classes of water service to become effective each January 1 of the biennial period. These recommended rates shall be the General Manager's determination, made in accordance with current Board policies, of the rates necessary to produce substantially the revenues to be derived from water sales during the biennial period beginning the following July 1.

(b) Not later than at its February meeting, the General Manager shall also present to the Finance and Insurance Committee recommendations regarding the continuation of a water standby charge or the imposition of an availability of service charge (such as the readiness-to-serve charge and capacity charge), which shall be the General Manager's determination, made in accordance with current Board policies, of the charge necessary to produce substantially the revenues to be derived from fixed revenue sources, if any,

exclusive of taxes, during the biennial period beginning the following July 1 which the Finance and Insurance Committee has determined to be necessary.

(c) Not later than its February meeting the Finance and Insurance Committee shall set a time or times for, and shall thereafter hold, one or more meetings of the Finance and Insurance Committee, to be held prior to its regular April meeting, at which interested parties may present their views regarding the proposed water rates and availability of service charges to said committee. The Finance and Insurance Committee shall direct the General Manager to cause the publication of a notice of such public hearing to be published in newspapers of general circulation within the District's service area. Such notice shall be published not less than 10 days prior to the public hearing.

(d) Not later than its regular April meeting the Finance and Insurance Committee shall make its determination regarding the revenue requirement to be paid from water rates and the water rates to become effective each January 1 of the biennial period and shall recommend said water rates to the Board no later than the Board's regular April meeting.

(e) Not later than its April meeting, the Board shall establish water rates for deliveries beginning each January 1 of the biennial period.

(f) Proposals for changes in water rates to become effective at times other than on January 1 shall require adequate notice to the public and a hearing before such proposals are acted upon by the Board, unless the Board finds that an immediate change in water rates is urgent.

Section 311.5 - M.I. 32924 – September 18, 1979, as clarified by M.I. 33059 – January 15, 1980; paragraph(g) [formerly Section 311.5.7] amended by M.I. 34867 – September 13, 1983. Section 311.5.7 repealed and Section 4304 adopted by M.I. 36464 – January 13, 1987, effective April 1, 1987; amended, new paragraphs (d), (f), (i) and (j) added and other paragraphs renumbered by M.I. 39976 - December 8, 1992; paragraphs (b) through (g), (i) and (j) amended by M.I. 41389 - May 9, 1995; paragraphs (a)-(d) amended by M.I. 42193 - December 10, 1996; paragraphs (b) through (g), and (i) and (j) amended by M.I. 43587 - June 8, 1999; paragraphs (a) through (k) amended by M. I. 44582 – August 20, 2001; paragraphs (a) – (g), (i), and (j) amended by M. I. 44812 - March 12, 2002; paragraph (a) amended, (a) (i) & (a) (ii) added, paragraphs (b) & (c) deleted, paragraphs (d) (e) (f) renumbered to (b) (c) (d), paragraph (g) renumbered to (e) and amended, paragraphs (h) (i) renumbered to (f) (g), and paragraphs (j) (k) renumbered to (h) (i), by order of M. I. 45537 - October 14, 2003; paragraphs (a)-(e) and (g)-(h) amended by M. I. 46064 – January 11, 2005; paragraphs (a) through (e), (g) and (h) amended (committee name change) by M. I. 46148 - March 8, 2005; paragraphs (a)-(i) amended by M.I. 46983 February 13, 2007; paragraph(b) and (c) amended, paragraph (d) deleted and renumbered by M.I. 47636 - September 9, 2008; paragraphs (c)-(e) amended by M.I. 48171 - February 9, 2010; paragraphs (a)-(g) amended by M.I. 48534 - January 11, 2011; amended § 4304 title, amended paragraphs (a)-(f), deleted former paragraphs (f) and (g), and renumbered former paragraph (h) by M.I. 49187 - September 11, 2012; paragraph (a)(2) amended by M.I. 51417 – December 11, 2018.

§ 5101. Investment of Surplus Funds.

(a) Pursuant to Government Code Section 53607, this Board shall delegate to the Treasurer of the District annually the authority to invest or to reinvest funds of the District subject to the terms and conditions set forth in this Section 5101. The Treasurer shall report each month transactions made pursuant to this delegation.

(b) The terms and conditions of this delegation to the Treasurer are as follows:

(1) The Treasurer shall assume full responsibility for all transactions hereby delegated.

(2) The Treasurer may invest such portion of any money in any sinking fund of the District, or any surplus moneys in the District's treasury not required for the immediate necessities of the District, as the Treasurer deems wise or expedient, in any of the securities authorized for investment by local agencies pursuant to Government Code Section 53601 or any successor statute; provided that such investments meet the

requirements of the most current Statement of Investment Policy approved by the Board, pursuant to Section 5114 below.

(3) The Treasurer may make any investment by direct purchase of any issue of the specified securities at their original sale or after they have been issued.

(4) The available cash amount and maximum period for any such investment by the Treasurer shall be determined by the General Manager. The Treasurer shall not liquidate any such investment except:

(i) To meet the District's cash requirements, which shall be determined by the General Manager; or

(ii) To generate cash for reinvestment whenever the General Manager determines that such reinvestment is in the District's interest.

The Treasurer shall not exchange any such investment unless the General Manager determines that such exchange is in the District's interest.

Subject to the above provisions of this subsection 5101(b)(4), the Treasurer may enter into a reverse repurchase agreement, so long as the proceeds of the reverse repurchase agreement are invested solely to supplement the income normally received from the securities involved in the agreement.

(5) The General Counsel shall review monthly and, if appropriate, approve as to eligibility the securities invested in by the Treasurer in the preceding month and report the determinations to the Board.

(6) Investment of Deferred Compensation Fund.

(i) The Treasurer may invest funds held by the District pursuant to the District's deferred compensation plan in accordance with this Section 5101, and may liquidate such investments to comply with the provisions of the plan in accordance with the determinations of the General Manager.

(ii) The Treasurer may also deposit for purposes of investment funds held by the District, pursuant to the District's deferred compensation plans, in the Metropolitan Water District Federal Credit Union to the limit insured by the National Credit Union Share Insurance Fund.

(c) The Treasurer is authorized to enter into safekeeping agreements, in form approved by the General Counsel, and thereafter may deposit for safekeeping the bonds, notes, bills, debentures, obligations, certificates of indebtedness, warrants or other evidences of indebtedness in which the money of the District is invested pursuant to the terms and conditions of this Section 5101 with any state or national bank with which there is a safekeeping agreement and which has sufficient security, as required by law, to secure the amount of any collections. All net collections which may be made by the bank from time to time pursuant to said safekeeping agreement shall immediately be deposited in a deposit account held by a state or national bank within this state which is supported by sufficient security, as required by law, to secure the amount of such collections. The Treasurer shall take from such bank a receipt for securities so deposited either in definitive form in such bank or held in book-entry form on the books of the Federal Reserve Bank. All securities purchased shall be held in safekeeping under such agreements and shall only be released from safekeeping pursuant to such agreements.

Res. 7695 - December 7, 1976; Section 471.2 amended by M.I. 33083 - January 15, 1980; paragraph (b)(6) [formerly Section 471.2.2.6] amended by M.I. 33208 - April 18, 1980; paragraph (b)(2)(vi) [formerly Section 471.2.2.2.6] added by M.I. 34811 - August 17, 1983; paragraph (b)(2) [formerly Section 471.2.2.2] amended by M.I. 35122 - May 8, 1984; paragraph (b)(5) [formerly Section 471.2.2.5] amended by M.I. 35462 - January 8, 1985; paragraphs (b)(2)(vii) and (b)(2)(viii) [formerly Sections 471.2.2.2.7 and 471.2.2.2.8] and paragraph (b)(6)(ii) [formerly Section 471.2.2.6.2] added and paragraph (b)(6) renumbered by M.I. 35555 - March 12, 1985; paragraph (b)(2)(iv) [formerly Section 471.2.2.2.4] amended and paragraph (b)(2)(ix) [formerly Section 471.2.2.2.9] added by M.I. 36272 - September 9, 1986. Section 471.2 repealed and Section 5101 adopted by M.I. 36464 - January 13,

1987, effective April 1, 1987; paragraph (b)(2)(vii) amended by M.I. 36492 - February 10, 1987 and by M.I. 36761 - August 18, 1987; amended by M.I. 36811 - September 22, 1987; amended by M.I. 38234 - May 8, 1990; paragraph (B)(2) amended by M.I. 38577 - November 20, 1990; paragraph (B)(2) amended by M.I. 39171 - August 20, 1991; paragraph (B)(2)(vi) amended by M.I. 39497 and (B)(2)(x) added by M.I. 39496 - March 10, 1992; paragraph (B)(2) amended by M.I. 39785 - August 20, 1992; paragraph (b)(2) amended and subparagraphs of (b)(2)(i) - February 8, 1994; paragraph (a) amended by M.I. 42275 - February 11, 1997; paragraph (c) amended by M.I. 42559 - August 19, 1997.

§. 5107. Biennial Budget Process.

(a) There shall be prepared each even-numbered year, under the direction of the General Manager, a proposed biennial budget covering District operations for the following two fiscal years. The proposed biennial budget shall be submitted to the Board no later than the date of the regular Board meeting in June immediately preceding the first fiscal year of the biennium to which the budget applies. The proposed biennial budget shall indicate by fund all anticipated expenses and required reserves and the source of revenues to be used to meet such expenses and provide such reserves. The proposed biennial budget will at a minimum include a five-year financial forecast. At least one Board Workshop on the proposed biennial budget will be conducted prior to submission of the proposed biennial budget for Board approval. The Finance and Insurance Committee shall review the proposed biennial budget in its entirety, together with the recommendations from the Board workshop, and report its recommendations to the Board.

(b) After considering the proposed biennial budget and making any revisions thereto that it may deem advisable, the Board shall adopt the biennial budget before the beginning of the biennial period to which the budget applies. The amounts provided in the adopted budget for the biennial period for total expenses for operations and maintenance, including minimum and variable operations and maintenance charges under water or power contracts with the State, for capital charges under such contracts, and for debt service shall be deemed to be appropriated from the funds indicated in the budget.

(c) The adoption of the budget shall have no effect upon appropriations for capital projects and continuing expenditures not susceptible to immediate direct allocation, as described in Section 5108 hereof, and shall not establish any limitations on expenditures for such purposes.

(d) The total operations and maintenance budget shall be measured against the regional rate of inflation as measured by the five-year rolling average change in the Consumer Price Index (CPI) for the Los Angeles-Riverside-range County area, not seasonally adjusted, for all items as reported by the U. S. Bureau of Labor Statistics. The budget will include explanations of increases greater than the CPI due to unique conditions, growth or expansion of services.

Ords. 127 and 129; repealed by Ord. 146; Section 471.8 added, as amended, by M.I. 32690 - April 10, 1979; amended by M.I. 36110 - June 10, 1986. Section 471.8 repealed and Section 5107 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; paragraph (a) amended by M.I. 36535 - March 10, 1987; paragraph (a) amended by M.I. 40231 - May 11, 1993; paragraph (a) amended by M.I. 41755 - February 13, 1996; paragraphs (a) and (b) amended by M.I. 42060 - September 10, 1996; paragraph (a) amended by M.I. 42193 - December 10, 1996; paragraph (a) amended by M. I. 44095 - July 11, 2000; paragraph (a) amended by M. I. 44582 - August 20, 2001; paragraph (a) amended and paragraph (d) added by M. I. 45904 - September 14, 2004; paragraph (a) amended by M. I. 46064 - January 11, 2005; paragraph (a) amended by M.I. 46148 - March 8, 2005; paragraph (a) amended by M.I. 46983 - February 13, 2007; paragraph (a) amended by M.I. 48534 - January 11, 2011; section title and paragraphs (a)-(b) amended by M.I. 48800 - September 13, 2011; paragraphs (a), (b), and (d) amended by M.I. 49187 - September 11, 2012

The District operates as a single enterprise fund for financial statements and budgeting purposes. Through its administrative code the District identifies a number of accounts, which are referred to as funds, to separately track uses of monies for specific purposes.

§. 5108. Appropriations.

(a) No expenditure shall be made unless an appropriation has been approved by the Board for the purpose intended.

(b) Appropriations may from time to time be authorized by the Board for capital projects not set forth in the Capital Investment Plan and for funding of continuing expenditures not susceptible to immediate direct allocation, including those for undistributed payroll and fringe benefits, for operating equipment, and for materials and equipment inventories. Appropriations for capital projects set forth in the Capital Investment Plan shall be authorized as described in Section 5108 (e). Appropriations for all other purposes shall be authorized on a biennial basis in accordance with Section 5107 hereof.

(c) Appropriations, whether made hereunder or under any other section of this Code, may be amended or closed by the Board provided such action does not impair any obligation which has been incurred by the District. Upon completion of all projects under capital appropriation, the General Manager shall close that appropriation after all work has been completed and all other costs have been paid. Unused appropriation balances shall be returned to funds available for appropriation. All appropriations shall be reviewed at least quarterly to determine the status of work and charges. The General Manager shall report annually to the Board on the status of appropriations for which no activity is being recorded to permit the Board to consider which, if any, of such appropriations should remain open or be closed.

(d) The General Manager is authorized to designate the source of funds for appropriations to pay capital program expenditures. Such funding shall comply with the MWD Act; Board resolutions authorizing security sales; Federal tax laws and U.S. Treasury regulations; tax and nonarbitrage certificates; and letters of instruction from bond counsel. The General Manager shall report quarterly to the Board all changes in sources of funding from those designated at time of approval of the appropriation.

(e) Following adoption of the biennial budget, the General Manager shall request that the Board appropriate funds required for the projects identified in the Capital Investment Plan for the next two fiscal years. If, during the biennial budget period, Capital Investment Plan expenditures are expected to exceed the appropriated amount, the General Manager shall request that the Board appropriate additional funding and submit a report supporting said request. Notwithstanding the foregoing, the Board at its discretion may appropriate only such amounts as it deems necessary for the completion of any Capital Investment Plan project.

Ords. 29, 113, and 129; repealed by Ord. 146; Section 471.9 added, as amended, by M.I. 32690 - April 10, 1979; amended by M.I. 36110 - June 10, 1986; paragraphs (b) and (c) amended by M.I. 36367 - November 18, 1986. Section 471.9 repealed and Section 5108 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; paragraph (c) amended by M.I. 38739 - February 12, 1991; paragraph (d) added by M.I. 39209 - September 17, 1991; paragraph (b) amended by M.I. 47636 - September 9, 2008; paragraph (b) amended by M.I. 49187 - September 11, 2012; amended paragraphs (b) and (c), and added new paragraph (e) by M.I. 51353 - October 9, 2018.

§ 5109. Capital Funding from Current Revenues.

The Board's objective is to balance the use of bond financing and operating revenues (pay-as-you-go) to maintain financial flexibility when funding the capital investment plan. The amount of annual expenses paid from operating revenues shall be determined by the Board as part of the biennial budget process and may include, without limitation, the costs of:

(a) Capital facilities or projects costing less than \$1 million.

(b) Capital improvement program studies.

(c) Reimbursable capital projects.

(d) Replacements and refurbishment of Metropolitan facilities or portions thereof.

The costs relating to provisions (a) through (c) above shall be paid from operating revenues, including revenues derived from water standby or availability service charges or benefit assessments, and proceeds from disposals of surplus property made available for expenditure by the Board.

When using tax-exempt bond financing, the weighted average maturity of the tax-exempt bonds may not exceed 120% of the weighted average useful life of the capital assets being financed.

M.I. 37449 - December 13, 1988; paragraph (c) added and renumbered (d) by M.I. 37530 - February 14, 1989; amended by M.I. 37679 - May 9, 1989; amended by M.I. 41580 - September 12, 1995; first paragraph and (d) amended by M.I. 43434 - March 9, 1999; paragraph (d) amended by M. I. 44907 - June 11, 2002; Section renamed, paragraph (d) amended and paragraph (e) added by M. I. 45904 - September 14, 2004; paragraph amended by M.I. 48800 - September 13, 2011; unnumbered introductory paragraph, and item(d) amended by M.I. 49187 - September 11, 2012; paragraph (a) amended by M.I. 50990 - October 10, 2017; Section title renamed, amended first paragraph, eliminated prior paragraph (b), renumbered prior paragraph (c) to paragraph (b), renumbered prior paragraph (e) to paragraph (c), eliminated paragraph (e), and added final paragraph by M.I. 51352 - October 9, 2018.

§ 5114 (a). Reporting Requirements of the Treasurer.

The Treasurer shall:

(a) Render, not later than the June Board meeting, a Statement of Investment Policy for the following fiscal year, to be considered for approval by the Board.

(b) Render a monthly report to the General Manager, the General Auditor and to the Board, showing the type of investment, issuer, date of maturity, par and dollar amount invested, current market value and source of such valuation, and rate of interest. The report shall additionally include a description of the funds, investments or investment programs of this District under the management of contracted parties (including lending programs), if any. The report shall also state compliance of the portfolio with the statement of investment policy, or the manner in which the portfolio is not in compliance. A subsidiary ledger of investments may be used in the report in accordance with accepted accounting practices.

Section 471.13 - M.I. 35463 - January 8, 1985. Section 471.13 repealed and Section 5112 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; renumbered by M.I. 37449 - December 13, 1988; amended by M.I. 40682 - February 8, 1994; paragraph (b) amended by M.I. 41717 - January 9, 1996; paragraph (a) amended by M.I. 42275 - February 11, 1997; paragraph (b) amended by M.I. 43968 - April 11, 2000; paragraph (a) amended by M.I. 50498 - June 14, 2016.

§. 5200. Funds Established.

To provide for accountability of public moneys in accordance with applicable federal and state law and regulations and Board policies, the following funds active or prospectively active have been established in the Treasury of the District:

(a) General Fund (Fund No. 1001, established 1929). Moneys not specifically allocated or appropriated may be placed in this fund and used for general purposes of the District. Expenditures for reimbursable work and water conservation capital and indirect costs under the contract with Imperial Irrigation District are paid from this fund.

(b) Replacement and Refurbishment Fund (Fund No. 5001, established 1988). Used to finance certain capital program expenditures from current revenues in accordance with Section 5109, subject to the conditions contained in Section 5202(b).

(c) State Contract Fund (Fund No. 5701, established 1960). Used for the payment of capital charges under the State Water Contract, including the capital charges for off-aqueduct power facilities, subject to the conditions contained in Section 5201(d).

(d) Special Tax Fund (Fund No. 5702, established 1951). Annexation fees (cash payments and special tax collections) are deposited in this fund and transferred to the State Contract Fund to pay a portion of State Water Contract capital charges.

(e) Water Revenue Fund (Fund No. 1002, established 1975). Receipts from water transactions, including, but not limited to, sales, exchanges, and wheeling are deposited in this fund and are transferred to various other funds in accordance with revenue bond covenants and Board resolutions to pay in order of priority:

(1) Operation and maintenance expenditures;

(2) The interest on and bond obligation of Water Revenue Bonds and Parity Obligations issued pursuant to Master Resolution 8329 (the Master Resolution or Senior Debt Resolution) adopted by the Board on July 9, 1991 and any Supplemental Resolutions thereto, and any other obligations on a parity with the Water Revenue Bonds;

(3) All other payments required for compliance with the Master Resolution, and any Supplemental Resolutions;

(4) The interest on and bond obligation of Subordinate Water Revenue Bonds and Parity Obligations issued pursuant to Master Subordinate Resolution 9199 (the Master Subordinate Resolution) adopted by the Board on March 8, 2016 and any Supplemental Resolutions thereto, and any other obligations on a parity with the Subordinate Water Revenue Bonds;

(5) All other payments required for compliance with the Master Subordinate Resolution, and any Supplemental Resolutions;

(6) Principal of and interest on Commercial Paper Notes and other amounts due a provider of a liquidity facility;

(7) Deposits into the Water Standby Charge Fund in accordance with resolutions imposing such charges; and

(8) Any other obligations which are charges, liens, or encumbrances upon or payable from net operating revenues.

Moneys remaining at the end of each month, after the foregoing transfers, are transferred to the Revenue Remainder Fund.

(f) Operation and Maintenance Fund (Fund No. 1003, established 1975). Used to pay all operation and maintenance expenditures, including State Water Contract operation, maintenance, power and replacement charges, subject to the conditions contained in Section 5201(f).

(g) Revenue Remainder Fund (Fund No. 1004, established 1975). Used to maintain working capital and may be used for any lawful purpose by the District, subject to the conditions contained in Section 5202.

(h) Water Rate Stabilization Fund (Fund No. 5501, established 1987). Used to reduce future water revenue requirements or, as directed by the Board, for other lawful purposes, in accordance with Section 5202.

(i) Water Treatment Surcharge Stabilization Fund (Fund No. 5502, established 1988). Used to mitigate required increases in the surcharge for water treatment or, as directed by the Board, for other lawful purposes, in accordance with Section 5202.

(j) Revolving Construction Fund (Fund No. 5003, established 1988). Capital expenditures made from this fund are to be reimbursed from proceeds of security sales to the extent such expenditures are authorized uses of debt proceeds under the Act, subject to the conditions and restrictions contained in Section 5201(g).

(k) Employee Deferred Compensation Fund (Fund No. 6003, established 1976). Compensation deferred by employees under Section 457 of the Internal Revenue Code of 1986, as amended, is deposited in this fund and is withdrawn in accordance with Articles 2 and 3 of Chapter 7 of Division VI of this Administrative Code.

(l) Iron Mountain Landfill Closure/Postclosure Maintenance Trust Fund (Fund No. 6005, established 1990). Used as a trust fund to maintain moneys sufficient to cover the costs of closure and postclosure maintenance of the District's solid waste landfill facility at Iron Mountain, in accordance with regulations of the California Integrated Waste Management Board, and subject to the conditions contained in Section 5201(l).

(m) Water Standby Charge Fund (Fund No. 1005, established 1992). Used to separately hold revenues attributable to water standby charges; amounts deposited in this fund are used exclusively for the purpose for which the water standby charge was authorized.

(n) Water Transfer Fund (Fund No. 1007, established 1995). Used for moneys set aside for the purchase of water through transfers or similar arrangements, and for the costs of filling the Eastside Reservoir Project.

(o) Self-Insured Retention fund (Fund No. 1008, established 1999). Used to separately hold amounts set aside for emergency repairs and claims against the District as provided in Section 5201(o).

(p) Lake Mathews Multi Species Reserve Trust fund (Fund 6101, established 1997.) Used as set forth in agreement between Metropolitan and the Riverside County Habitat Conservation Agency for the Multi Species Reserve.

(q) There shall be established in the Treasury of the District such funds and accounts as are required pursuant to bond covenants, tax and non-arbitrage certificates, bond counsel letters of instruction and related documents, to provide for accountability of District funds and compliance with applicable federal and state law and regulations. Such funds and accounts shall be established for each issue of bonds, notes or other obligations of the district as required in the respective bond or note resolution and closing documents.

(r) Water Stewardship Fund (Fund No. 1009 established 2005). Used to collect revenue from the Water Stewardship Rate and to pay costs associated with water recycling, seawater desalination, conservation, brackish water desalination, or other demand management programs. These funds can also be used to fund administrative costs associated with these programs. Funds may be used as directed by the Board, for other lawful purposes, in accordance with Section 5201(p) and Section 5202(d).

38241 - May 8, 1990; amended and paragraph (bb) added by M.I. 38305 - June 12, 1990; paragraphs (cc), (dd) and (ee) added by M.I. 38999 - June 11, 1991; amended and paragraphs (ff), (gg), (hh) and (ii) added by M.I. 39171 - August 20, 1991; paragraphs (jj), (kk), and (ll) added by M.I. 39785 - August 20, 1992; paragraph (k)(6) added, paragraph (jj) added, paragraphs (kk) - (mm) renumbered by M.I. 39925 - November 10, 1992; new paragraphs (nn) through (uu) added by M.I. 40272 - June 15, 1993; paragraph (bb) amended by M.I. 40273 - June 15, 1993; paragraphs (vv) through (bbb) added by M.I. 40388 - August 24, 1993; paragraphs (i) and (q) amended, paragraph (r) deleted and remainder of section renumbered by M.I. 40443 - September 21, 1993; paragraph (q) amended by M.I. 40976 - August 19, 1994; paragraph (bbb) added by M.I. 41581 - September 12, 1995; paragraphs (a) through (bbb) amended and new paragraphs (bbb) through (sss) added by M.I. 42817 - February 10, 1998; paragraphs (ttt) through (aaaa) added April 1998, by authority granted to the General Counsel by M.I. 42817 - February 10, 1998; paragraphs (bbbb) through (jjjj) added September 1998, by authority granted to the General Counsel by M.I. 42817 - February 10, 1998; paragraph (kkkk) added by M.I. 43434 - March 9, 1999; paragraph (a) amended, old

paragraphs (c), (g)-(j), (m), (n), (p), (q), (u)-(x), (z), (bb)-(hh), (jj)-(aaa), and (ccc)-(jjjj) deleted, remaining paragraphs renumbered, and new paragraphs (q) and (r) added by M. I. 45249 - March 11, 2003; paragraph (b) amended, paragraph (e) repealed and paragraphs (f) - (r) renumbered by M. I. 45904 - September 14, 2004; new paragraph (r) added by M. I. 46266 - June 14, 2005; paragraph (g) amended by M. I. 46838 - October 10 2006; deleted previous paragraph (e)(2), added paragraphs (e)(4) and (e)(5), and renumbered paragraphs (e)(2) through (e)(8) by M.I. 50498 - June 14, 2016; paragraph (e) amended by M.I. 51417 - December 11, 2018.

§. 5201. Restricted Funds.

Cash and securities to be held in the various ledger funds shall be as follows:

(a) General Obligation Bond Interest and Principal Funds and the Waterworks General Obligation Refunding Bonds Interest and Principal Funds, the cash and securities in each as of June 30, shall be at least equal to the debt service for the ensuing 18 months, less revenues anticipated to be derived from the next succeeding tax levy specifically for such debt service.

(b) For the Water Revenue Bonds Interest and Principal Funds, the Water Revenue Bonds Reserve Funds, the Water Revenue Refunding Bonds Interest and Principal Funds and the Water Revenue Refunding Reserve Bonds, the cash and securities in each shall be at least equal to the minimums required by the resolutions of issuance for such bonds.

(c) For the Subordinate Bonds Interest and Principal Funds, the Subordinate Water Revenue Bonds Reserve Funds, the Subordinate Water Revenue Refunding Bonds Interest and Principal Funds and the Subordinate Water Revenue Refunding Reserve Funds, the cash and securities in each shall be at least equal to the minimums required by the resolutions of issuance for such bonds.

(d) For the Bond Construction Funds there shall be no minimum requirements; provided that any cash and securities in such funds shall be restricted to use for the purposes such finances were required.

(e) For the State Contract Fund, cash and securities on hand June 30 and December 31 shall equal the capital payments to the State Department of Water Resources that are due on July 1 of the same year and January 1 of the following year, respectively.

(f) For the Special Tax Fund, there shall be no minimum requirement.

(g) For the Operation and Maintenance Fund, cash and securities shall be at least equal to the minimum required by the resolutions of issuance for revenue bonds.

(h) For the Revolving Construction Fund, there shall be no minimum requirement. Cash and securities in this fund, unless restricted as to use by resolution of the Board, shall be available for transfer to the Water Rate Stabilization Fund and the Water Treatment Surcharge Stabilization Fund at the discretion of the Board. Provisions updated to reflect the actions of the Board of Directors through its 12/11/2018 meeting.

(i) For the Commercial Paper, Series A, Note Payment Fund, and the Commercial Paper, Series B, Note Payment Fund, the District shall deposit amounts sufficient to pay principal of, and interest on, such Commercial Paper Notes in an amount at least equal to one-half of the projected interest payments due on such notes in the subsequent fiscal year.

(j) For the Water Standby Charge Fund, there shall be no minimum requirement; provided that any cash and securities in such fund shall be restricted to use for the purposes such moneys were authorized.

(k) For the General Obligation Bond Excess Earnings Funds, the Waterworks General Obligation Refunding Bond Excess Earnings funds, the Water Revenue Bond Excess Earnings Funds and the Water Revenue Refunding Bond Excess Earnings Funds, the minimum requirement shall be the amounts deposited into this fund in accordance with the provisions of the Tax and Nonarbitrage Certificates and Resolutions for the Bonds.

(l) For the Waterworks General Obligation Refunding Bonds, 1993 Series A1 and A2, Escrow Account Fund, the minimum requirement shall be the amounts necessary to pay the principal, if any, and the interest on the Series A1 and A2 Bonds to the crossover date, and to defease certain maturities of outstanding prior general obligation bonds.

(m) For the Iron Mountain Landfill Closure/Postclosure Maintenance Trust Fund, cash and securities as of June 30, shall be at least equal to the General Manager's latest estimates of closure and postclosure maintenance costs.

(n) For the Optional General Obligation Bond Redemption Fund and the Optional Revenue Bond Redemption Fund, the minimum requirement shall be the amount necessary to redeem such untendered, refunded bonds which have been called for redemption.

(o) For the Water Transfer Fund, all amounts budgeted or pledged for purchase of water through transfers or similar arrangements, and for the costs of filling the Eastside Reservoir Project, shall be set aside in such fund and used solely for such purpose.

(p) For the Self-Insured Retention fund, all amounts in such fund shall be set aside and used solely for emergency repairs and claims against the District. The minimum cash and securities to be held in such fund as of June 30 of each year shall be \$25 million.

(q) For the Water Stewardship Fund, there shall be no minimum requirement; all amounts in such fund shall be used to fund the Conservation Credit Program, Local Resources Program, seawater desalination, brackish water desalination, and similar demand management programs, including the departmental operations and maintenance costs for administering these programs.

Section 331.1 - M.I. 32735 - May 8, 1979, effective July 1, 1979 [Supersedes M.I. 30984 - August 19, 1975; M.I. 31826 - June 14, 1977 and M.I. 32292 - June 13, 1978]; paragraph (f) [formerly Section 331.1.6] added by M.I. 35309 - September 11, 1984. Section 331.1 repealed and Section 5200 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 36676 - June 9, 1987; paragraph (g) added by M.I. 37449 - December 13, 1988; renumbered to Section 5201 and paragraphs (a) and (c) amended by M.I. 38241 - May 8, 1990; paragraph (c) amended and paragraph (h) added by M.I. 38999 - June 11, 1991; paragraphs (b) and (c) amended by M.I. 39171 - August 20, 1991; paragraphs (b) and (c) amended by M.I. 39785 - August 20, 1992; paragraph (i) added by M.I. 39925 - November 10, 1992; paragraphs (a)(b)(c) amended and Provisions updated to reflect the actions of the Board of Directors through its 12/11/2018 meeting. paragraph (j)(k) added by M.I. 40272 - June 15, 1993; paragraph (h) amended and paragraph (l) added by M.I. 40273 - June 15, 1993; paragraphs (a), (b), and (j) amended by M.I. 40388 - August 24, 1993; paragraph (j) amended and paragraph (m) added by M.I. 40443 - September 21, 1993; paragraph (n) added by M.I. 41581 - September 12, 1995; paragraphs (b)(c)(h)(j)(k)(l)(n) amended by M.I. 42817-- February 10, 1998; paragraphs (b), (c), and (j) amended April 1998 by authority granted the General Counsel by M.I. 42817 - February 10, 1998; paragraph (o) added by M.I. 43434 - March 9, 1999; paragraphs (a)-(c), and (j) amended by M. I. 45249 - March 11, 2003; paragraph (n) amended by M. I. 45775 - June 8, 2004; paragraph (p) added by M. I. 46266 - June 14, 2005; amended paragraph (b), added paragraph (c), and renumbered paragraphs (d) through (q) by M.I. 50498 - June 14, 2016.

§. 5202. Fund Parameters.

The minimum cash and securities to be held in the various ledger funds as of June 30 of each year shall be as follows:

(a) For the Revenue Remainder Fund cash and securities on hand of June 30 of each year shall be equal to the portion of fixed costs of the District estimated to be recovered by revenues from water transactions, including, but not limited to, sales, exchanges, and wheeling, for the eighteen months beginning with the immediately succeeding July. Such funds are to be used in the event that revenues are insufficient to pay the costs of the District.

(b) For the Replacement and Refurbishment Fund, any unexpended monies shall remain in the Fund for purposes defined in Section 5109, or as otherwise determined by the Board. The end-of-year fund balance may not exceed \$160 million. Available monies in excess of \$160 million at June 30 shall be transferred to the Water Rate Stabilization Fund, unless otherwise determined by the Board.

(c) Amounts remaining in the Revenue Remainder on June 30 of each year after meeting the requirements set forth in Section 5202(a) shall be transferred to the Water Rate Stabilization Fund and to the extent required under Section 5202(d), to the Water Treatment Surcharge Stabilization Fund.

(d) After making the transfer of funds as set forth in Section 5202(c), a determination shall be made to substantially identify the portion, if any, of such transferred funds attributable to collections of treatment surcharge revenue in excess of water treatment cost and to collections of water stewardship rate revenue in excess of costs of the Conservation Credits Program, Local Resources Program seawater desalination and similar demand management programs, including the departmental operations and maintenance costs of administering these programs. Such funds shall be transferred to the Water Treatment Surcharge Stabilization Fund and the Water Stewardship Fund, respectively, to be available for the principal purpose of mitigating required increases in the treatment surcharge and water stewardship rates. If such determination indicates a deficiency in treatment surcharge or water stewardship rate revenue occurred during the fiscal year, a transfer of funds shall be made from the Water Treatment Surcharge Stabilization Fund or the Water Stewardship Fund, as needed and appropriate, to reimburse funds used for the deficiency. Notwithstanding the principal purpose of the Water Treatment Surcharge Stabilization Fund and the Water Stewardship Fund, amounts assigned to these fund shall be available for any other lawful purpose of the District.

(e) Amounts in the Water Rate Stabilization Fund shall be held for the principal purpose of maintaining stable and predictable water rates and charges. The amount to be held in the Water Rate Stabilization fund shall be targeted to be equal to the portion of the fixed costs of the District estimated to be recovered by revenues from water transactions, including, but not limited to, sales, exchanges, and wheeling, during the two years immediately following the eighteen- month period referenced in Section 5202(a). Funds in excess of such targeted amount shall be utilized for capital expenditures of the District in lieu of the issuance of additional debt, or for the redemption, defeasance or purchase of outstanding bonds or commercial paper of the District as determined by the Board. Provided that the District's 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 the District, as determined by the Board of Directors, provided that any funds distributed to member agencies shall be allocated on the basis of water revenues during the previous fiscal year, such revenues to include sales under the Interim Agricultural Water Program, Replenishment Service Program and all Full Service water sales.

Notwithstanding the fund parameters set forth in this Section 5202, including, but not limited to, any minimum fund balances or specified uses and purposes, all amounts held in the foregoing funds shall be available to pay interest on and Bond Obligation (including Mandatory Sinking Account Payments) of Water Revenue Bonds issued pursuant to Resolution 8329 adopted by the Board on July 9, 1991, as amended and supplemented (the Master Resolution), and Parity Obligations, and Subordinate Water Revenue Bonds, issued pursuant to Resolution 9199 adopted by the Board on March 8, 2016, as amended and supplemented (the Master Subordinate Resolution). Capitalized terms not defined in this paragraph shall have the meanings assigned to such terms in the Master Resolution and the Master Subordinate Resolution.

Section 331.2 - M.I. 32735 - May 8, 1979, effective July 1, 1979 [Supersedes M.I. 30984 - August 19, 1975; M.I. 31826 - June 14, 1977 and M.I. 32292 - June 13, 1978]; amended by M.I. 35309 - September 11, 1984; amended by M.I. 35730 - July 9, 1985. Section 331.2 repealed and Section 5201 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; paragraph (a) amended and paragraph (b) added by M.I. 36676 - June 9, 1987; paragraph (a) amended by M.I. 36731 - July 14, 1987; paragraph (b) amended and paragraph (c) added by M.I. 37007 - February 9, 1988; amended by M.I. 37449 - December 13, 1988; paragraph (a) amended by M.I. 37679 - May 9, 1989; renumbered to Section 5202 by M.I. 38241 - May 8, 1990; paragraphs (c) and (d) amended by M. I. 38304 - June 12, 1990; paragraph (a) amended by M.I. 39794 - August 20, 1992; paragraph (e) added by M.I. 41581 - September 12, 1995; Section renamed and paragraphs (a)-(c) and (e) amended by M.I.43434 - March 9, 1999; paragraph (e) amended by M.I. 43587 - June 8, 1999; paragraph (b), (c) and (e) amended by M. I. 44907 - June 11, 2002; paragraph (b) amended by M. I. 45904 - September 14, 2004; paragraph (d) amended by M. I. 46266 - June

14, 2005; Paragraph (e) amended by M. I. 46838 - October 10, 2006; final paragraph added by M.I. 47286 by M.I.49734 - April 8, 2014; amended paragraph (e) by M.I. 50498 - June 14, 2016 paragraphs (a) and (e) amended by M.I. 51417 - December 11, 2018.

§. 5203. Indirect Credit of District.

The Chief Executive Officer may negotiate with the Department of Water Resources on the basis of using the indirect credit of the District to finance State Revenue Bonds so long as the obligation of the District thereunder does not exceed the obligation required under the State Contract.

Section 331.2 renumbered 331.3. Section 331.3 repealed and Section 5202 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; renumbered to Section 5203 by M.I. 38241 - May 8, 1990.

§. 5204. Compliance with Fund Requirements and Bond Indenture Provisions.

As of June 30 of each year, the Chief Executive Officer shall make a review to determine whether the minimum fund requirements outlined in this Chapter have been met and whether the District has complied with the provisions of the articles and covenants contained in the resolutions of issuance for all outstanding District bond issues during the preceding fiscal year. The Chief Executive Officer, after consulting with the General Counsel, shall report the results of his review in writing to the Board of Directors annually.

Section 331.4 - M.I. 34190 - April 13, 1982. Section 331.4 repealed and Section 5203 adopted by M.I. 36464 - January 13, 1987, effective April 1, 1987; amended by M.I. 36676 - June 9, 1987; renumbered to Section 5204 by M.I. 38241 - May 8, 1990

OPERATING POLICIES

| O.P. NUMBER | TITLE | ISSUE DATE | REVISION DATE |
|-------------|---|------------|---------------|
| F-01 | Operating, Expensed and Capital Equipment | 3/17/97 | 5/29/02 |

- SUMMARY** This policy relates to the purchase, assignment, tracking, maintenance, and retirement of operating, expensed and capital (OEC) equipment.
- SUPERSESSION** This Operating Policy supersedes Operating Policy F-01 dated March 17, 1997.
- AUTHORITY** The Chief Executive Officer (CEO) delegates the authority to establish and maintain OEC equipment policies and procedures to the Chief Financial Officer and Business Services Section, respectively.
- DEFINITIONS**
- Operating Equipment:** a discrete piece of equipment that is not a component part of a fixed asset or stationary facility. The equipment must have:
- An original purchase cost equal to or greater than \$5,000. The capitalized amount includes the cost of the equipment, tax, transportation, delivery, third-party installation, and other acquisition costs.
 - A useful life of at least five years from the date of acquisition (four years for vehicles).
- Expensed Equipment:** a discrete piece of equipment that is not a component part of a fixed asset or stationary facility and has an original purchase cost of less than \$5,000. Attachments and improvements to expensed equipment are also expensed.
- **Trackable:** expensed equipment that must be tracked because it is loss prone or incurs monthly charges. Items that incur monthly charges, such as cell phones, are tracked by their coordinators.
 - **Nontrackable:** those pieces of expensed equipment that do not meet the criteria stated above.
- Capital Equipment:** equipment that is charged to capital projects and entered at zero cost in the Oracle Asset Tracking System (OATS).

POLICIES

1. Operating equipment is purchased through the operating equipment appropriation and general fund. Operating equipment is capitalized and depreciated.
2. Expensed equipment is acquired through the Operations and Maintenance (O&M) budget fund under the Equipment Expensed account. Expensed equipment is not capitalized.
3. Capital equipment is charged to the appropriate capital project. Operating equipment purchased to support a capital project or contract is depreciated against the life of the project. When the equipment is sold, the net proceeds are credited against the project cost.
4. Metropolitan assets classified as OEC equipment are purchased, received, tracked, and retired in the operating equipment database (OATS). Access to the OATS database is granted only to regular employees.
 - OEC equipment is assigned only to regular employees by their managers or supervisors.
 - Upon receipt, OEC equipment is barcoded by designated site receivers or their alternates.
5. Operating equipment upgrades extend the life or increase the functional capability of major pieces of operating equipment and are capitalized, provided the upgrade meets the following criteria:
 - Cost exceeds \$5,000
 - Cost is greater than 50% of the original total purchase price of the equipment
 - Upgrade extends the estimated life of the equipment by at least three years

**POLICIES
(continued)**

6. Loss and theft of OEC equipment is reported to the immediate supervisor of the employee or special custodian to whom the equipment was assigned. An incident report is filed. Further information about loss and theft of equipment is contained in the Operating, Expensed and Capital Equipment Manual.
7. OEC equipment is disposed of in accordance with established procedures. (See Operating Policy F-02, Disposal of Surplus Personal
8. Accounting adjustments, including cost and useful life adjustments and warranty exchanges, are supported with appropriate documented management approvals

RESPONSIBILITIES

The Chief Financial Officer (CFO), or the CFO's designee, establishes, publishes, and oversees relevant accounting policies and procedures for the acquisition, use, accountability and disposal of OEC equipment.

Group Manager, Corporate Resources, is responsible for monitoring Metropolitan OEC equipment. Group Managers delegate responsibility for tracking to Asset Coordinators in the Business Services Section.

Employees are accountable for the operating equipment and permanently assigned items provided to them. Employees adhere to the procedures for acknowledging equipment transfers.

REFERENCES

- Administrative Code, Sections 8270-8272
- Operating, Expensed and Capital Equipment Policies and Procedures Manual
- Operating Policy F-02, Disposal of Surplus Personal Property

APPROVAL

Ronald R. Gastelum, Chief Executive Officer

Date

| O.P. NUMBER | TITLE | ISSUE DATE | REVISION DATE |
|-------------|---|------------|---------------|
| F-07 | Capitalization & Retirement of Plant Assets | 3/6/02 | 3/12/09 |

| | |
|--------------------|---|
| SUMMARY | This document establishes the policies governing the capitalization and retirement of plant assets. |
| SUPERSESSON | This Operating Policy supersedes Operating Policy F-07 originally issued September 23, 1998; revised March 6, 2002. |
| AUTHORITY | The General Manager delegates the authority to establish and maintain policies regulating the capitalization and retirement of plant assets to the Chief Financial Officer/Assistant General Manager or designee. |
| DEFINITIONS | <p>Component Equipment – equipment considered to be part of a plant, usually determined when the item is permanently affixed in one location (as opposed to operating equipment as defined in Operating Policy F-01, Operating, Expensed and Capital Equipment).</p> <p>Plant Assets – a new facility, betterment, replacement/refurbishment, or equipment which is a component part of a plant and that has both:</p> <ul style="list-style-type: none"> • A total cost of at least \$50,000 • A useful life of at least five years <p>Replacement/Refurbishment – the substitution/repair of a new facility or component of an existing facility. A replacement always involves a replacement of facilities or component, and a refurbishment may involve the replacement of facilities or component.</p> <p>Retirement – the result of the replacement of existing facilities with new facilities designed to accomplish the same function, or as the result of the sale or abandonment of facilities that are no longer of economic use.</p> <p>Service Connection – a pipeline, with its appurtenances, that branches off or connects the water distribution system to customer facilities.</p> <p>Integrated Software – computer software that is integrated into and necessary to operate general plant and equipment (e.g., Supervisory Control and Data Acquisition system [SCADA], telephone system, and computer-operated lathes), rather than perform an application.</p> |

POLICIES

1. Any item of cost that conforms to the criteria of plant assets shall be capitalized as a plant asset; otherwise the cost is charged to operations and maintenance expense.
2. When multiple components of a plant asset are acquired or built, and the components have individual costs of less than \$50,000, the cost of these items is an operations and maintenance expense. If the components have useful lives of five years or more, they are capitalized when:
 - The aggregate total costs exceed \$50,000, and
 - The components are added simultaneously or within a planned short period of time.
3. Service connections are capitalized as plant assets and are not subject to the \$50,000 cost criterion. Customers pay the cost of acquiring and installing service connections. The customer contribution is recorded as contributed capital.
4. Integrated software is considered part of the plant and equipment of which it is an integral part and capitalized and depreciated accordingly. The aggregate cost of the hardware and software is used to determine whether to capitalize or expense the costs.
5. Replacement or refurbishment costs are charged to operations and maintenance expense provided such costs do not exceed the capital cost and useful life criteria for the assets involved.
6. Plant assets replaced, sold or abandoned are removed from accounting records. The Engineering Services Section notifies the Controller of plant assets to be retired.
7. Costs of replacement plant assets are accumulated under separate and identifiable project numbers. Project descriptions identify, to the extent practicable, the plant assets being retired.

POLICIES (Cont.)

8. When plant assets are retired, the original cost and the related depreciation are removed from the accounting records. If the original cost cannot be identified, an estimate based on current cost is used.
9. The capitalization threshold will be reviewed every five years commencing January 1, 2009, and adjusted as necessary.

REFERENCES

- Operating Policy F-01, Operating, Expensed and Capital Equipment
- MWD Administrative Code Section 5108, Appropriations
- Government Accounting Standards Board Statement No. 34 - Basic Financial Statements - and Management's Discussion and Analysis - for State and Local Governments
- Government Finance Officers Association - Accounting for Capital Assets, A Guide for State and Local Governments

APPROVAL

| | |
|---|----------------|
| <u>Original signed by Jeffrey Kightlinger</u> | <u>3/12/09</u> |
| Jeffrey Kightlinger, General Manager | Date |

STATEMENT OF INVESTMENT POLICY (June 11, 2019)

I. POLICY

This Statement of Investment Policy (Policy) is intended to outline the guidelines and practices to be used in managing the Metropolitan Water District of Southern California's (District) investment portfolio. District funds not required for immediate cash disbursements will be invested in compliance with the Government Code of the state of California (California Government Code).

II. INVESTMENT AUTHORITY

As authorized by Section 53607 of the California Government Code, authority to invest or reinvest funds of the District is hereby delegated by the Board of Directors to the Treasurer, for a period of one-year, who shall thereafter assume full responsibility for the investment program until the delegation of authority is revoked or expires. Subject to review, the Board of Directors may renew the delegation of authority each year. The Treasurer may delegate the day-to-day investment activities to their designee(s) but not the responsibility for the overall investment program.

The Treasurer may also delegate the day-to-day execution of investments to registered investment managers through written agreements. The investment manager(s), in coordination with the Treasurer, will manage on a daily basis the District's investment portfolio pursuant to the specific and stated investment objectives of the District. The investment manager(s) shall follow this Policy, the specific investment guidelines provided to each investment manager, and such other written instructions provided by the Treasurer or their designee(s). The investment manager(s) may be given discretion to acquire and dispose of assets in their designated account, but the investment manager(s) shall not be permitted to have custodial control over the District's investment portfolio.

III. STATEMENT OF OBJECTIVES

In accordance with California Government Code Section 53600.5, and in order of importance, the Treasurer shall adhere to the following three criteria:

1. **Safety of Principal.** Investments shall be undertaken which first seek to ensure the preservation of principal in the portfolio. The Treasurer shall ensure that each investment transaction is evaluated or cause to have evaluated each potential investment, seeking both quality in issuer and in underlying security or collateral, and shall diversify the portfolio to reduce exposure to loss. Diversification of the portfolio will be used in order to reduce exposure to principal loss.
2. **Liquidity.** Investments shall be made whose maturity date is compatible with cash flow requirements of the District and which will permit easy and rapid conversion into cash without substantial loss of principal.
3. **Return on Investment.** Investments shall be undertaken to produce an acceptable rate of return after first considering safety of principal and liquidity and the prudent investor standard.

IV. SCOPE

This Policy applies to all funds and investment activities under the direct authority of the District and accounted for in the Comprehensive Annual Financial Report, except for the employee's retirement and deferred compensation funds. In addition, deposits with banks under the California Government Code's "Deposit of Funds" provisions are excluded from this Policy's requirements. Funds of the District will be invested in compliance with the provisions of, but not necessarily limited to securities specified in the California Government Code Section 53601 et seq. and other applicable statutes. Investments will be in accordance with these policies and written administrative procedures. Investment of the District's bond proceeds shall be subject to the conditions and restrictions of bond documents and are not governed by this Policy.

V. PRUDENT INVESTOR STANDARD

Pursuant to California Government Code Section 53600.3, all persons authorized to make investment decisions on behalf of the District are trustees and therefore fiduciaries subject to the “prudent investor standard”. The prudent investment standard obligates a trustee to ensure that “when investing, reinvesting, purchasing, acquiring, exchanging, selling, or managing public funds, a trustee shall act with care, skill, prudence, and diligence under the circumstances then prevailing, including, but not limited to, the general economic conditions and the anticipated needs of the agency that a prudent person acting in a like capacity and familiarity with those matters would use in the conduct of funds of a like character and with like aims, to safeguard the principal and maintain the liquidity needs of the agency. Within the limitations of this section and considering individual investments as part of an overall strategy, investments may be acquired as authorized by law.”

VI. SAFEKEEPING AND CUSTODY

To protect against potential losses caused by the collapse of individual securities dealers, all investment transactions involving deliverable securities will be conducted on a delivery versus payment (DVP) basis. All deliverable securities owned by the District, including collateral on repurchase agreements, shall be held in safekeeping by a third party bank trust department acting as agent for the District under the terms of a custody agreement executed by the bank and the District. All financial institutions that provide safekeeping services for the District shall be required to provide reports or safekeeping receipts directly to the Controller to verify securities taken into their possession. The Controller shall also maintain evidence of the District ownership in non-deliverable securities (e.g. LAIF, CAMP, and Time CDs).

VII. INVESTMENT TRANSACTIONS

Information concerning investment opportunities and market developments will be gained by maintaining contact with the financial community. Confirmations for investment transactions will be sent directly to the Controller for audit. When practical, the Treasurer shall solicit more than one quotation on each trade.

VIII. REPORTING

If the Board delegates responsibility of the investment program to the Treasurer, then in accordance with the Metropolitan Water District Administrative Code, Section 5114, the Treasurer shall submit a monthly report to the Executive Secretary of the Board of Directors via the General Manager indicating the types of investment by fund and date of maturity, and shall provide the current market value of all securities, rates of interest, and expected yield to maturity. The Treasurer shall also submit a monthly summary report to the Board of Directors via the General Manager showing investment activity, including yield and earnings, and the status of cash by depository.

In addition, the monthly report shall also include a statement denoting the ability to meet the District’s expenditure requirements for the next six (6) months. The report shall also state compliance of the portfolio to this Policy, or manner in which the portfolio is not in compliance. In the event of non-compliance, staff will prepare a report for the Board that details the compliance issue, provides analysis, and provides a recommendation to bring the portfolio back into compliance with this Policy.

IX. PERFORMANCE STANDARDS

The investment portfolio shall be managed with the objective of obtaining a rate of return throughout budgetary and economic cycles, commensurate with the investment risk constraints and the cash flow needs of the District. The District will employ an active management approach that allows for the sale of securities prior to their scheduled maturity dates. Securities may be sold for a variety of reasons, such as to increase yield, lengthen or shorten maturities, to take a profit, or to increase investment quality. In no instance shall a transaction be used for purely speculative purposes. The District recognizes that in a diversified portfolio occasional measured losses are inevitable and must be considered within the context of the overall portfolio’s structure and expected investment return, with the proviso that adequate diversification and credit analysis have been implemented. Because the

composition of the portfolio fluctuates, depending on market and credit conditions, various appropriate indices selected by the Treasurer will be used to monitor performance.

X. INVESTMENT GUIDELINES AND ELIGIBLE SECURITIES

The District is governed by the California Government Code, Sections 53600 et seq. Within the context of these limitations, the investments listed below are authorized.

The District is prohibited from investing in any investment authorized by the California Government Code but not explicitly listed in this Policy without the prior approval of the Board of Directors. Some of the limitations on investments set forth below are more stringent than required by the California Government Code and have been included to better manage the credit risks specific to the District's portfolio. Under the provisions of California Government Code Sections 53601.6, the District shall not invest any funds covered by this Investment Policy in inverse floaters, range notes, mortgage-derived, interest-only strips or any investment that may result in a zero interest accrual if held to maturity.

1. US Treasury Obligations

United States Treasury notes, bonds, bills, or certificates of indebtedness, or those for which the faith and credit of the United States are pledged for the payment of principal and interest.

- Maximum allocation: 100% of the portfolio
- Maximum maturity: Five (5) years
- Credit requirement: N.A.

2. Federal Agency Obligations

Federal agency or United States government-sponsored enterprise obligations, participations, or other instruments, including those issued by or fully guaranteed as to principal and interest by federal agencies or United States government-sponsored enterprises.

- Maximum allocation: 100% of the portfolio
- Maximum maturity: Five (5) years
- Credit requirement: N.A.

3. Banker's Acceptances

Bills of exchange or time drafts drawn on and accepted by a commercial bank, typically created from a letter of credit issued in a foreign trade transaction.

- Maximum allocation: Forty percent (40%) of the portfolio; five percent (5%) with any one issuer
- Maximum maturity: One-hundred eighty (180) days
- Credit requirement: A-1 or its equivalent or better by a Nationally Recognized Statistical Rating Organization (NRSRO).
- Issued by banks with total deposits of over one billion dollars (\$1,000,000,000)
- Issued by banks from offices in the USA.

4. Commercial Paper

Commercial paper is defined as short-term, unsecured promissory notes issued by financial and non-financial companies to raise short-term cash. Financial companies issue commercial paper to support their consumer and/or business lending; non-financial companies issue for operating funds.

- Maximum allocation: Twenty-five percent (25%) of the portfolio; five percent (5%) with any one issuer

- Maximum maturity: Two hundred seventy (270) days
- Credit requirement: Highest ranking or highest letter and number rating as provided by an NRSRO.
- Entity issuing the commercial paper must meet the conditions of California Government Code Section 53601(h)(1) or (2).
- Limited 10 percent of the outstanding commercial paper of any single issuer.

5. **Medium Term Corporate Notes**

All corporate and depository institution debt securities (not to include other investment types specified in Code) issued by corporations organized and operating within the United States or by depository institutions licensed by the United States or any state and operating within the United States.

- Maximum allocation: Thirty percent (30%) of the portfolio; five percent (5%) with any one issuer
- Maximum maturity: Five (5) years
- Credit requirement: A or its equivalent or better by an NRSRO.

6. **Negotiable Certificates of Deposit**

Issued by a nationally or state-chartered bank, a savings association or a federal association, a state or federal credit union, or by a federally licensed or state-licensed branch of a foreign bank.

- Maximum allocation: Thirty percent (30%) of the portfolio, five percent (5%) with any one issuer
- Maximum maturity: Five (5) years
- Credit requirement: A (long-term) or A-1 (short-term) or their equivalents or better by an NRSRO
- Issued by banks with total deposits of one billion dollars (\$1,000,000,000) or more

7. **Time Certificates of Deposit**

Time deposits, which are non-negotiable, are issued most commonly by commercial banks, savings and loans and credit unions with federal deposit insurance available for amounts up to two hundred-fifty thousand (\$250,000).

- Maximum limit: Thirty percent (30%) of the portfolio for all deposits
- Maximum maturity: Five (5) years
- Credit requirement: All deposits must be collateralized as required by California Government Code Sections 53630 et seq. The Treasurer may waive collateral for the portion of any deposits that is insured pursuant to federal law.
- Deposits are limited to a state or national bank, savings association or federal association, a state or federal credit union, or a federally insured industrial loan company, located in California.
- Deposits must meet the conditions of California Government Code Sections 53630 et seq.

Pursuant to Government Code 53637, the District is prohibited from investing in certificate of deposits of a state or federal credit union if a member of the District's Board of Directors, or any person at the District with investment decision-making authority, serves on the board of directors or committee of the state or federal credit union.

8. **Money Market Mutual Funds**

Shares of beneficial interest issued by diversified management companies that are money market funds registered with the SEC.

- Maximum maturity: N/A
- Maximum allocation: Twenty percent (20%) of the portfolio
- Credit requirement: Highest ranking by not less than two NRSROs or must retain an investment advisor

- that meets specified requirements
- The use of money market funds are limited to Government money market funds that provide daily liquidity and seek to maintain a stable Net Asset Value (NAV)

9. **State of California, Local Agency Investment Fund (LAIF)**

LAIF is a pooled investment fund overseen by the State Treasurer, which operates like a money market fund, but is for the exclusive benefit of governmental entities within the state. The maximum investment amount currently authorized by Local Agency Investment Fund (LAIF) is sixty-five million (\$65 million), which is subject to change. The LAIF is in trust in the custody of the State of California Treasurer. The District's right to withdraw its deposited monies from LAIF is not contingent upon the State's failure to adopt a State Budget.

- Maximum limit: The current limit set by LAIF for operating accounts
- Maximum maturity: N/A
- Credit requirement: N/A

10. **Municipal Bonds and Notes**

Municipal obligations issued by the State of California, any other of the states in the union, or a local agency within the State of California. This may include bonds, notes, warrants, or other evidences of indebtedness including bonds payable solely out of the revenues from a revenue-producing property owned, controlled, or operated by an authorized entity.

- Maximum limit: Thirty percent (30%) of the portfolio; five percent (5%) with any one issuer
- Maximum maturity: Five (5) years
- Credit requirement: A (long-term) or A-1 (short-term) or their equivalents or better by an NRSRO
- Must be issued by State of California, any of the other 49 states, or a California local agency

11. **Repurchase Agreement**

A repurchase agreement is a purchase of authorized securities with terms including a written agreement by the seller to repurchase the securities on a future date and price.

- Maximum allocation: Twenty percent (20%) of the portfolio
- Maximum maturity: Two hundred seventy (270) days
- Master Repurchase Agreement must be on file
- Limited to primary dealers or financial institutions rated in a rating category of "A" or its equivalent or higher by an NRSRO.
- Fully collateralized at market value of at least one hundred two percent (102%) with US government or federal agency securities

12. **California Asset Management Program (CAMP)**

Shares of beneficial interest issued by a joint powers authority organized pursuant to Section 6509.7.

- Maximum allocation: Twenty percent (20%) of the portfolio
- Maximum maturity: N/A
- Credit requirement: AAAM or its equivalent or better by an NRSRO
- Joint powers authority has retained an investment adviser that is registered or exempt from registration with the Securities and Exchange Commission, has five or more years of experience investing in the securities and obligations authorized under California Government Code Section 53601, and has assets under management in excess of five hundred million dollars (\$500,000,000).

13. Supranationals

Securities issued or unconditionally guaranteed by the International Bank for Reconstruction and Development (IBRD), International Finance Corporation (IFC), or Inter-American Development Bank (IADB) and eligible for purchase and sale within the United States.

- Maximum allocation: Thirty percent (30%) of the portfolio
- Maximum maturity: Five (5) years
- Credit requirement: AA or its equivalent or better by an NRSRO.

14. Asset-Backed Securities

A mortgage pass-through security, collateralized mortgage obligation, mortgage-backed or other pay-through bond, equipment lease-backed certificate, consumer receivable pass-through certificate, or consumer receivable-backed bond.

- Maximum allocation: Twenty percent (20%) of the portfolio, five percent (5%) with any one issuer
- Maximum maturity: Five (5) years
- Credit requirement: AA or its equivalent or better by an NRSRO.

XI. DIVERSIFICATION

The District shall seek to diversify the investments within the investment portfolio to avoid incurring unreasonable risks inherent in concentrated holdings in specific instruments, individual financial institutions or maturities. To promote diversification, this Policy sets various percentage holding limits by investment type and issuer. Investment type and issuer percentage limitation listed in this Policy are calculated at the time the security is purchased. Per issuer limits, when listed, are calculated across investment types at the parent company level. Should an investment percentage be exceeded due to instances such as the fluctuation in overall portfolio size, or market valuation changes, the Treasurer is not required to sell the affected securities. However, no additional investments can be made in that investment type or issuer while it is above the limits established by this Policy.

XII. CREDIT RATINGS

Credit rating requirements for eligible securities in this Policy refer specify the minimum credit rating category required at the time of purchase without regard to +, -, or 1, 2, 3 modifiers, if any. The security, at the time of purchase, may not be rated below the minimum credit requirement by any of the NRSROs that rate the security.

If a security is downgraded below the minimum rating criteria specified in this Policy, the Treasurer shall determine a course of action to be taken on a case-by-case basis considering such factors as the reason for the downgrade, prognosis for recovery or further rating downgrades, and the market price of the security. The Treasurer shall note in the monthly report any securities which have been downgraded below Policy requirements and the recommended course of action.

XIII. MATURITY

The Treasurer shall maintain a system to monitor and forecast revenues and expenditures so that the District's funds can be invested to the fullest extent possible while providing sufficient liquidity to meet the District's reasonably anticipated cash flow requirements.

The investment portfolio is divided into liquidity, core and bond reserves portfolios. The duration of the liquidity portfolio is limited to the duration of the index plus or minus 0.5 years. The duration of the core portfolio will be limited to the duration of the benchmark index plus or minus 1.5 years.

The final maturity of any investment in the portfolios shall not exceed five (5) years with certain exceptions:

- The Treasurer is authorized to invest special trust funds in investment with a term to maximum maturity in excess of five years. These funds include, but are not limited to, the Water Revenue Bond Reserve Funds, Escrow Funds, Debt Service Funds, the Iron Mountain Landfill Closure/Post-closure Maintenance Trust Fund, and the Lake Mathews Multi-Species Reserve Trust Fund.
- The core portfolio may hold United States Treasury and Federal Agency securities with maturities in excess of five years.

XIV. ADMINISTRATION

The Treasurer may, at any time, establish more restrictive requirements for securities approved for investment as deemed appropriate in this Policy. These restrictions may include, but are not limited to, higher credit ratings, lower percentage limits by security type or issuer, shorter maturities and additional collateral requirements for collateralized investments.

XV. AUTHORIZED FINANCIAL DEALERS AND INSTITUTIONS

For investments not purchased directly from the issuer, the Treasurer shall select only brokers/dealers who are licensed and in good standing with the California Department of Securities, the Securities and Exchange Commission, the Financial Industry Regulatory Authority (FINRA) or other applicable self-regulatory organizations. Before engaging in investment transactions with a broker/dealer, the Treasurer shall obtain a signed verification form that attests the individual has reviewed the District's Policy, and intends to present only those investment recommendations and transactions to the District that is appropriate under the terms and conditions of the Policy.

The District's external investment manager(s) may be granted discretion to purchase and sell investment securities in accordance with this Policy. Investment managers may also use their own list of internally-approved issuers, broker-dealers and other financial firms, so long as such managers are registered under the Investment Advisers Act of 1940.

XVI. INTERNAL CONTROLS

The Treasurer or designee shall maintain a system of internal control procedures designed to ensure compliance with the Policy and to prevent losses due to fraud, employee error, and misrepresentations by third parties or unanticipated changes in financial markets. The internal control procedures shall apply to the investment activities of any person with investment decision-making authority acting on behalf of the District. Procedures should include references to individuals authorized to execute transactions or transfers, safekeeping agreements, repurchase agreements, wire transfer agreements, collateral/depository agreements and banking services contracts, as appropriate. The internal control structure shall be designed to provide reasonable assurance that these objectives are met. The concept of reasonable assurance recognizes that (1) the cost of a control should not exceed the benefits likely to be derived; and (2) the valuation of costs and benefits requires estimates and judgement by management. As part of the annual audit, the District's external auditor will perform a review of investment transactions to verify compliance with policies and procedures.

XVII. ETHICS AND CONFLICT OF INTEREST

The Treasurer and designees shall refrain from personal business activity that could conflict with the proper execution and management of the investment program or that could impair their ability to make impartial decisions.

The Treasurer and designees shall disclose to the Ethics Officer and General Counsel any personal financial interests that could conflict with the proper execution and management of the investment program, or that could impair their ability to make impartial decisions.

XVIII. INVESTMENT POLICY

This Policy shall be reviewed periodically by the Treasurer with any and all modifications made thereto approved by the Board of Directors at a public meeting.

GLOSSARY OF TERMS

20 x 2020 — 2009 Water Conservation Act goal of twenty percent reduction in per capita regional water use by 2020.

ACE — Association of Confidential Employees; an employee bargaining unit at Metropolitan.

Accrual — An accounting method that records revenues when earned and expenses when incurred regardless of the timing of when the cash is actually paid or received.

Acre-Foot — A unit of measure equivalent to 325,851.4 gallons of water and weighs approximately 62.4 pounds, which meets the needs of two average families in and around the home for one year.

ACWA — Association of California Water Agencies.

AFSCME — American Federation of State, County, and Municipal Employees, Local 1902.

Appropriation — Money set aside for a specific purpose. The designation of the use to which a fund of money is to be applied.

Bay Delta — An environmentally sensitive area of the Sacramento/San Joaquin River Delta through and from which water flows to reach portions of California from the San Francisco Bay Area to San Diego. Moving water across the delta during the high-demand summer months is becoming more difficult as additional water is set aside to mitigate for environmental impacts.

Budget — A report of all anticipated expenditures and required reserves and the source of moneys to be used to meet such expenditures and provide such reserves.

Budgeted Position — A staff position approved by the Board of Directors for the fiscal year.

California WaterFix (CA WaterFix) — California WaterFix is a comprehensive science-based solution proposed by the state to modernize critical water delivery infrastructure of the State Water Project. The California WaterFix proposes construction of new water intakes in the north Delta and two 40-foot diameter tunnels under the Delta terminating at a forebay in the South Delta. This would fulfill the requirement of the 2009 Delta Reform Act to contribute toward meeting the coequal goals of providing a more reliable water supply for California and protecting, restoring and enhancing the Delta ecosystem. In May 2019, the Department of Water Resources (DWR) withdrew approval of the California WaterFix project.

Capital Investment Plan (CIP) — Metropolitan's CIP is designed to refurbish existing facilities needed to ensure a reliable distribution system, expand treatment facilities to meet current and future water quality regulations, and expand storage and conveyance facilities to meet current and future storage requirements.

Capital Project — A project that results in a new asset (e.g., a facility, betterment, replacement, equipment, etc.) that has a total cost of at least \$50,000 and a useful life of at least five years. Computer software can be capitalized if it costs \$250,000 or more and has a useful life of at least three years.

The California Environmental Quality Act (CEQA) — A statute that requires state and local agencies to identify the significant environmental impacts of their actions, and to avoid or mitigate those impacts, if feasible.

Colorado River Aqueduct (CRA) — The 242-mile-long water conveyance system built by Metropolitan to carry water from the Colorado River to its Southern California service area.

Conservation Program — A program where Metropolitan provides financial assistance for the development of conservation programs at the local level (e.g. energy efficient washing machines, low flush toilets, etc.).

CUWCC — California Urban Water Conservation Council, a non-profit 501c3 formed as a partnership of water suppliers, environmental groups, and others interested in conserving California's greatest natural resource, water.

Debt Service — The annual cost of repaying outstanding debt.

Delta Conveyance — The Department of Water Resources (DWR) is pursuing a new environmental review and planning process for a single tunnel project to modernize the State Water Project's Bay-Delta conveyance. The formal environmental review process is expected to begin with a Notice of Preparation under CEQA anticipated to be issued by DWR in the late 2019 timeframe. Planning, environmental review and conceptual design work by DWR for a proposed single tunnel project is expected to take approximately 18 to 36 months. A single tunnel project to be proposed under the new planning effort and environmental review process to be undertaken by DWR may be designed and configured differently than previously analyzed single tunnel alternatives. Information regarding the Delta conveyance project is located on Metropolitan's website at <http://www.mwdh2o.com/DocSvcPubs/DeltaConveyance/index.html>.

Department of Water Resources (DWR) — A department within the California Resources Agency which is responsible for the state's management and regulation of water usage.

Distribution System — Refers to the network of pipelines and canals used for the conveyance of water from Metropolitan's terminal reservoirs to member agency service connections.

DVL — Diamond Valley Lake. A reservoir built by Metropolitan with a capacity of 800,000 AF.

EIR — Environmental Impact Report.

EMS — Energy Management System.

Endangered Species Act (ESA) — An act of the federal government enacted in 1973 that provides for the conservation of species that are endangered or threatened and the conservation of the ecosystems on which they depend. A species is considered endangered if it is in danger of extinction throughout all or a significant portion of its range. A species is considered threatened if it is likely to become an endangered species within the foreseeable future.

Enterprise Fund — To account for operations that are financed and operated where the intent is that the costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis be financed or recovered primarily through user charges.

Ethics Program — State law (SB 60) mandates that Metropolitan maintain a program to address and seek to avoid potential ethical abuses relating to business relationships, solicitation and/or receipt of campaign contributions, and public notice and approval procedures for contracts of \$50K or more. This program includes on-going training for board members and employees regarding ethics in the workplace.

FERC — Federal Energy Regulatory Commission.

Fund — A self-balancing set of accounts recording cash and other financial resources, together with all related liabilities and residual equities or balances, and changes therein, which are segregated for the purpose of

carrying on specific activities or attaining certain objective in accordance with special regulations, restrictions, or limitations.

Fund Balance — Created from excess revenues over expenditures. This can be a combination of collections/ revenues being higher than budget and actual expenditures being lower than budget.

IID/Metropolitan Conservation Agreement — Water conservation agreement with the Imperial Irrigation District (IID) that allows for the development of certain water conservation capital structures by Metropolitan in the Imperial Valley. Metropolitan, in turn, gets the quantity of water conserved during the term of this agreement, four years during construction, and 35 years after completion. It encompasses both the operating and maintenance, in direct, and capital cost of developing and implementing the program. This agreement is renewable.

IRWMP — Integrated Regional Water Management Plan.

Integrated Resources Plan (IRP) — An open and participatory planning process that takes a broad view of all water resource options available to the region and searches for the right combination of investments to achieve water supply objectives in a cost-conscious and environmentally responsible manner.

Local Resources Program (LRP) — A program in which Metropolitan provides financial assistance to its member agencies for the development of local groundwater recycling and groundwater recovery projects.

MAPA — Management and Professional Employees Association, Local 1001.

Member Agency — Refers to any of the 26 cities or public water agencies that comprise the Metropolitan Water District and whose representatives constitute the Board of Directors of Metropolitan.

MAF (million acre-feet) — A unit measure of water.

Minute 319 — Agreement that amends the 1944 Treaty between Mexico and the United States by establishing new rules in sharing Colorado River water and provides immediate plans to address current challenges. Parties to the agreement include Metropolitan Water District of Southern California, Southern Nevada Water Authority, Central Arizona Water Conservation District. Minute 319 allows Mexico to store water in Lake Mead as Intentionally Created Mexican Apportionment for future delivery and environmental flows. Stored water will be exchanged among the parties to the agreement.

MWDOC — Municipal Water District of Orange County; one of 26 member agencies that comprise Metropolitan.

MOU (Memorandum of Understanding) — Legal agreements entered into between Metropolitan and any of the four employee bargaining units that dictate terms and conditions of employment.

Operating Equipment — Any portable equipment costing \$5,000 or more and having a useful life of five years or more.

Operations Maintenance Power & Recovery (OMP&R) — A component of the State Water Contract that is billed to the contracting agencies to maintain the system.

OPEB — Other Post Employment Benefits.

ORP — Oxidation Retrofit Program.

Ozone — It is an unstable form of oxygen composed of three-atom molecules that break down readily to normal oxygen and nascent oxygen. The latter is a powerful oxidizing agent and has germicidal action. Ozone is usually produced with on-site generators by passing high-voltage electricity through dry atmospheric air or pure

oxygen between stationary electrodes. This process converts a small percentage of the oxygen in the air into ozone. It is usually injected into the water to be treated in a highly baffled mixing chamber.

PAYGO — The practice of funding construction expenditures from current operating revenues in lieu of using debt proceeds.

PVID — Palo Verde Irrigation District.

Palo Verde Land Management and Water Supply Program — Calls for the development of a flexible water supply of between 25,000 and 111,000 acre-feet per year for 35 years through a land management and crop rotation program to be implemented by participating farmers in the Palo Verde Valley. The maximum water supply that could be developed would be about 3.63 million acre-feet during the 35-year term while the minimum water supply required to be developed would be 1.76 million acre-feet.

Performance Measure — An indicator of progress toward completing an initiative, achieving a goal, or implementing a strategy. Performance measures are quantifiable and tracked over time. Measures can indicate problem areas that need attention or be a guide for continual performance improvement through specific initiatives and actions.

PCCP — Pre-stressed Concrete Cylinder Pipe.

Power Recovery — Energy generated from the operation of sixteen Metropolitan-owned hydroelectric generating facilities. The term "recovery" derives from the capture of potentially wasted electrical energy from Metropolitan's water distribution system.

Quagga Mussel — A destructive non-native species of mussel from the Ukraine region that could clog pipes and water line.

Quantification Settlement Agreement (QSA) - The Quantification Settlement Agreement (QSA) and related agreements, executed by Coachella Valley Water District (CVWD), Imperial Irrigation District (IID), Metropolitan, and other parties in October 2003, establishes Colorado River water use limits for IID and CVWD, and provides for specific acquisitions of conserved water and water supply and delivery arrangements for up to 110 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.

Regional Recycled Water Program (RRWP) — The first phase was the construction of an advanced water treatment demonstration facility that takes treated wastewater and purifies it through various advanced treatment technologies to produce a safe, high-quality water source; the project was a partnership between Metropolitan and the Sanitation Districts of Los Angeles County and was completed in August 2019. Testing and operation of the plant to confirm treatment costs and provide the basis for regulatory approval of the proposed treatment process and technical recommendations concerning design, operation, and optimization of the full-scale RRWP will be completed in 2020. The RRWP will have the flexibility to be expanded in the future to implement Direct Potable Reuse ("DPR") through raw water augmentation at the two Metropolitan treatment plants. The State Water Resources Control Board Division of Drinking Water is in the process of developing a framework for the regulation of DPR in California, and the current anticipated date for promulgation is 2023. Information regarding the RRWP is located on Metropolitan's website at <http://www.mwdh2o.com/DocSvcsPubs/rrwp/index.html#home>

Replacement and Refurbishment (R&R) — Capital projects that invest in Metropolitan's aging infrastructure by restoring them to optimal operating status.

Reserves — Funds set aside to comply with bond covenants, working capital policy, or other board policies as part of a prudent financial strategy.

Revenue Remainder Fund — See Financial Policies for description.

SCADA — Supervisory Control and Data Acquisition; automated systems that are used to monitor, operate, and control Metropolitan's water conveyance, treatment, and distribution systems.

SDCWA — San Diego County Water Authority; one of 26 member agencies that make up Metropolitan.

Senate Bill 60 (SB 60) — This bill requires Metropolitan to place increased emphasis on sustainable, environmentally sound, and cost-effective water conservation, recycling, and groundwater storage and replenishment measures and, commencing February 1, 2001, to prepare and submit to the Legislature a prescribed annual report relating to water conservation.

State Water Contract (SWC) — State Water Contracts are the basis for all SWP construction and ongoing operations. As the largest of the now 29 contractors, Metropolitan is entitled to slightly less than half of all SWP supplies. Water supplies from the SWP are conveyed to Metropolitan via the SWP's 444-mile California Aqueduct, which was made possible pursuant to Metropolitan's State Water Contract.

State Water Project (SWP) — The SWP is the largest state-built, user-financed water supply and transportation project in the country. The SWP serves urban and agricultural agencies from the San Francisco Bay area to Southern California. Its facilities were constructed with several general types of financing, the repayment of which is made by the 29 agencies and districts that participate in the SWP through long-term contracts (the State Water Contractors). The State Water Contractors also pay for the operations, maintenance, power, and replacement costs of the SWP.

System Overview Study — An analysis of Metropolitan's current delivery and treatment capacities versus projected needs during the planning horizon. The System Overview Study, coupled with the Integrated Area Study, analyzes various portfolios of projects that could be used to meet future demand and then develops a potential CIP. Finally, the System Overview Study analyzes the potential impact to rates from the proposed facilities.

TAF (thousand acre-feet) — A unit of measure of water.

Total Dissolved Solids (TDS) — Refers to the total organic carbon concentration in water. Measurement of TDS removal is used as a surrogate for disinfection by-product precursor removal.

Treatment Plants — Facilities used by Metropolitan for the treatment of water to remove contaminants or total dissolved solids thus ensuring that such water is potable before it is distributed to member agencies.

U.S. Department of the Interior, Bureau of Reclamation (USBR) — Largest wholesaler of water and second largest supplier of hydroelectric power in the American West. Promotes water conservation, recycling, and reuse.

Vacancy Factor — A calculated reduction to the O&M labor budget that attempts to account for vacancies that occur within organizations throughout the year. Budgeted labor dollars assume that budgeted positions will be filled for the entire fiscal year (2,080 hours). However, positions routinely become vacant throughout Metropolitan for part of the year as staff transfer to other positions or leave employment in the company and time elapses during the recruitment period to refill the vacated positions.

WRSF — Water Rate Stabilization Fund. See Financial Policies for description.

WRM — Water Resource Management (group); an organization within Metropolitan that focuses on water resource planning and management, including conservation.

WSF — Water Stewardship Fund. See Financial Policies for description.

Water Supply Allocation Plan (WSAP) — This plan is intended to be implemented during periods of regional water shortages to promote conservation of scarce water supplies. The WSAP was created to approach limiting supplies in a manner that is regionally fair and minimizes impacts by establishing accurate and fair baselines for each of Metropolitan's 26 member agencies.

Water Supply Programs — Water transfer and storage programs that supplement Colorado River and State Water Project supplies.

Water Surplus Drought Management Plan (WSDM Plan) — This plan directs Metropolitan's resource operations to help attain the region's reliability goal. The WSDM Plan recognizes the interdependence of surplus and shortage actions and is a coordinated plan that utilizes all available resources to maximize supply reliability. The overall objective is to ensure that shortage allocation of Metropolitan's imported water supplies is minimized.

Working Capital — A measure of both a company's efficiency and its short-term financial health. The working capital ratio is calculated as: $\text{Working Capital} = \text{Current Assets} - \text{Current Liabilities}$.

WSO — Water System Operations (group); an organization within Metropolitan responsible for operating and maintaining Metropolitan's water conveyance, treatment, and distribution system and its appurtenant systems.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

RESOLUTION 9265

**RESOLUTION OF THE BOARD OF DIRECTORS
OF THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
FIXING AND ADOPTING WATER RATES
TO BE EFFECTIVE JANUARY 1, 2021 AND 2022**

The Board of Directors of The Metropolitan Water District of Southern California (the “Board”) hereby finds that:

1. The Board of Directors (“Board”) of The Metropolitan Water District of Southern California (“Metropolitan”), pursuant to Sections 133 and 134 of the Metropolitan Water District Act (the “Act”), is authorized to fix such rate or rates for water that, so far as practicable, will result in revenue which, together with revenue from any water standby or availability service charge or assessment, will pay the operating expenses of Metropolitan, provide for repairs and maintenance, provide for payment of the purchase price or other charges for property or services or other rights acquired by Metropolitan, and provide for the payment of the interest and principal of its bonded debt; and

2. On March 12, 2002, the Board adopted Resolution 8805, “Resolution Of The Board Of Directors Of The Metropolitan Water District Of Southern California Fixing And Adopting Rates And Charges For Fiscal Year 2002/03 And To Direct Further Actions In Connection Therewith”, adopting a new structure for Metropolitan’s water rates and charges in order to enhance Metropolitan’s fiscal stability and ability to ensure the region’s long-term water supply while reasonably and fairly allocating the cost of providing service to its member agencies; and

3. The rate structure adopted by Resolution 8805 was the product of a three-year process that included a strategic planning process commenced by the Board in July 1998, discussions with member agencies, retail agencies and other stakeholders and numerous meetings of Metropolitan’s Board, Audit, Budget and Finance Committee, Budget, Finance and Investment Committee and Subcommittee on Rate Structure Implementation; and

4. Development of the rate structure adopted by Resolution 8805 included Strategic Plan Policy Principles adopted by the Board on December 14, 1999 to provide a framework for the development of a revised rate structure; a Composite Rate Structure Framework adopted by the Board on April 11, 2000 (the “Rate Structure Framework”); a Rate Structure Action Plan adopted by the Board on December 12, 2000; and study of (i) a detailed rate design proposal presented in December 2000 (the “December 2000 Proposal”) developed from the Rate Structure Framework and (ii) an alternative rate structure proposal presented in September 2001 (the “Proposal”) that addressed concerns which were raised about the December 2000 Proposal; and

5. By Resolution 8774, “Resolution Of The Board Of Directors Of The Metropolitan Water District Of Southern California To Approve Rate Structure Proposal And To Direct Further Actions In Connection Therewith,” adopted October 16, 2001, the Board approved the Proposal, which unbundled water rates and charges to reflect the different service functions undertaken by Metropolitan, and determined that the Proposal (i) was consistent with the Board's Strategic Plan Policy Principles, (ii) addressed issues raised during the consideration of the December 2000 Proposal, (iii) furthered Metropolitan’s strategic objectives of ensuring the region’s long term water supply reliability through encouragement of sound and efficient water resources management, water conservation, and accommodating a water transfer market, and (iv) enhanced the fiscal stability of Metropolitan; and

6. By Resolution 8774, the Board directed the General Manager to (i) prepare a report on the Proposal describing each of the rates and charges and the cost of service process used to develop the rates and charges and (ii) utilize the Proposal as the basis for determining Metropolitan’s revenue requirements and recommending rates to become effective January 1, 2003, in accordance with Metropolitan’s annual rate-setting procedure under the Administrative Code; and

7. On January 7, 2002, the General Manager presented to the Budget, Finance and Investment Committee (formerly the Audit, Budget and Finance Committee and today, the Finance and Insurance Committee) a detailed report describing each of the rates and charges and the supporting cost of service process, dated December 2001 (the “2001 Cost of Service Report”), that (i) described the rate structure process and design; (ii) identified revenue requirements; (iii) showed the costs of major service functions that Metropolitan provides to its member agencies, (iv) classified these service function costs based on the use of and benefit from the Metropolitan system to create a logical nexus between the costs and the revenues required from each of the rates and charges; and (iv) set forth the rates and charges necessary to defray such costs; and

8. By Resolution 8805 the Board found and determined that the cost of service process reasonably and fairly: (i) identified revenue requirements; (ii) allocated costs to the service functions that Metropolitan provides to its member agencies; (iii) classified service function costs based upon use of and benefit from Metropolitan’s system, and (iv) allocated costs to rates and charges based upon customary water industry standards; and

9. By Resolution 8805 the Board found and determined that the water rates and charges were supported by the cost of service process and that such rates and charges reasonably and fairly allocated the costs of providing service of Metropolitan’s water system to its member agencies and third-party transporters of water, if any; and

10. The Board received the Final Report on Rates and Charges, dated June 28, 2002, that (i) described the rate structure process and design; (ii) identified revenue requirements; (iii) showed the costs of major service functions that Metropolitan undertakes, (iv) classified these service function costs based on the use of and benefit of the Metropolitan system to create a logical nexus between the costs and the revenues required from each of the rates and charges; and (iv) set forth the rates and charges necessary to defray such costs; and

11. Metropolitan’s water rates approved by the Board thereafter (on March 11, 2003, March 9, 2004, March 8, 2005, March 14, 2006, April 10, 2007, March 11, 2008, April 14, 2009, April 14, 2010, April 10, 2012, April 8, 2014, April 12, 2016, and April 10, 2018) have utilized the unbundled water rate elements in the rate structure approved by Resolution 8774 and implemented by Resolution 8805; and

12. The cost of service process supporting Metropolitan’s water rates approved by the Board on March 11, 2003 and in following years is consistent with the cost of service process described in the

2001 Cost of Service Report. Raftelis Financial Consultants, Inc. (“RFC”), the firm engaged in 1998 to perform a comprehensive cost of service study and assist in the development of the rate structure, confirmed to the Board in a report dated April 6, 2010, that the fiscal year 2010/11 cost of service report presented to the Board in January 2010 was accurate and consistent with the 2001 Cost of Service Report and that the fiscal year 2010/11 cost of service report and rate methodology was consistent with water industry best practices and complies with cost of service and rate guidelines in the American Water Works Association’s Manual M-1, *Principles of Water Rates, Fees and Charges*; and

13. In *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.*, San Francisco Superior Court Case Nos. CPF-10-510830 and CPF-12-512466 (the “2010 and 2012 Cases,” collectively), the San Diego County Water Authority challenged Metropolitan’s water rates adopted on April 13, 2010 and April 10, 2012, and Metropolitan is defending such challenges; and

14. on June 21, 2017, the Court of Appeal entered a decision in the 2010 and 2012 Cases in *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.*, 12 Cal.App.5th 1124, holding that Metropolitan may recover its State Water Project transportation costs through its transportation rates and that based on the administrative record before it the rates in CYs 2011 through 2014 did not support Metropolitan’s Water Stewardship Rate allocation to its transportation rates, and on September 27, 2017, the California Supreme Court denied SDCWA’s Petition for Review, making the decision final; and

15. San Diego County Water Authority has filed lawsuits also challenging Metropolitan’s water rates adopted on April 8, 2014, April 12, 2016, and April 10, 2018, each also titled *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.*, pending in the San Francisco Superior Court under Case Nos. CPF-14-514004, CPF-16-515282, and CPF-18-516389, and the Court has ordered the cases stayed pending the 2010 and 2012 Cases; and

16. Pursuant to Resolution 8329, adopted by the Board on July 9, 1991 and Resolution 9199, adopted by the Board on March 8, 2016, and as each is thereafter amended and supplemented, proceeds of the rates and other revenues from the sale or availability of water are pledged to the payment of Metropolitan’s outstanding revenue bonds and to the payment of Metropolitan’s outstanding subordinate revenue bonds and to revenue bonds and subordinate bonds to be issued pursuant to Resolution 8329 and Resolution 9199; and

17. On January 31, 2020, the General Manager and Chief Financial Officer provided to the Board and the public a board letter describing the proposed biennial budget for fiscal years 2020/21 and 2021/22, identifying key assumptions, addressing key circumstances such as current state water supply conditions, and continued maintenance of the current ad valorem tax rate, incorporating a ten-year financial forecast; determining anticipated total revenues and revenues anticipated to be derived from water transactions and firm revenue sources required during fiscal years 2020/21 and 2021/22, identifying revenue requirements for that period and recommending rates and charges consistent with cost of service principles to be effective January 1, 2021 and January 1, 2022, and explaining that costs and revenues may be at variance with forecasts and variations will be addressed, for example by contributions to, or withdraws from, financial reserves maintained for this purpose; and

18. The recommended rates were developed using the same unbundled water rate elements in the rate structure approved by Resolution 8774 and implemented by Resolution 8805, as detailed in the FYs 2020/21 and 2021/22 Cost of Service Report for Proposed Water Rates and Charges (the “2020 Cost of Service Report”) provided to the Board and the public on January 31, 2020; and

19. The detailed proposed departmental and non-departmental biennial budget for fiscal years 2020/21 and 2021/22 (the “Proposed Biennial Budget”) was distributed to the Board and the public on January 31, 2020; and

20. On January 31, 2020, the capital investment plan (CIP) appendix to the detailed Proposed Biennial Budget for fiscal years 2020/21 and 2021/22 was also provided to the Board and the public, providing detailed information on proposed capital projects and capital improvement costs; and

21. Board workshops and discussions regarding the Proposed Biennial Budget and future water rates and charges were held on February 10, 2020, March 9, 2020, and April 13, 2020 at the regularly scheduled Finance and Insurance Committee meetings, and on February 25, 2020 at a special meeting of the Finance and Insurance Committee; and

22. The Board conducted a public hearing at its regular meeting on March 10, 2020, at which interested parties were given the opportunity to present their views regarding the proposed water rates and charges; and

23. Notice of the public hearing was published prior to the hearing in various newspapers of general circulation within Metropolitan’s service area; and

24. Metropolitan received written comments regarding the proposed water rates and charges, which, together with Metropolitan’s responses, have been provided to the Board and the public; and

25. After the Board completed Workshop #3 on March 10, 2020, COVID-19 spread throughout the United States and the World. The World Health Organization declared a COVID-19 pandemic on March 11, 2020. Stay-at-home orders, other social distancing directives, and state-of-emergency orders went into effect within Metropolitan’s service area, throughout California, and throughout the nation. Utility retailers, including some member agencies of Metropolitan and agencies that purchase water from them, anticipate their customers are likely to be adversely impacted financially. Those impacts may result in the inability to pay utility bills, which would also create financial stress on Metropolitan’s member agencies. The extent of the financial impact to be caused by the COVID-19 pandemic is unknown at this time, as is the relief measures the federal and state governments may provide to assist in such impacts. But it is clear that the financial impact to our region and beyond will be significant and far reaching. For example, the rate of CIP expenditures is anticipated to decrease based on delays in projects. Additionally, staff updated the projections in treated and untreated water demands based on the anticipated impacts of PFAS and PFOS on groundwater basins. Accordingly, staff provided the Board with updated recommendations for the biennial budget, rates, and charges; and

26. Before the April 2020 Board meeting, the General Manager and Chief Financial Officer provided to the Board and the public a board letter describing the modifications to the Proposed Biennial Budget for fiscal years 2020/21 and 2021/22 (updated with minor revisions since the version distributed on January 31, 2020); updates to the determination of total revenues and of revenues to be derived from water transactions and firm revenue sources required during fiscal years 2020/21 and 2021/22, and updates to the proposed rates to be effective January 1, 2021 and January 1, 2022, and charges to be effective January 1, 2021; and

27. Each of the meetings of the Board were conducted in accordance with the Brown Act (commencing at Section 54950 of the Government Code), for which due notice was provided and at which quorums were present and acting throughout; and

28. All board letters, reports, presentations and other documents referred to in this

Resolution may be viewed by Board members and the public on Metropolitan’s web page at <http://www.mwdh2o.com> or in the office of the Board Executive Secretary;

NOW, THEREFORE, the Board of Directors of The Metropolitan Water District of Southern California does hereby resolve, determine and order as follows:

Section 1. That the Board of Directors of The Metropolitan Water District of Southern California hereby fixes and adopts the following water rates, to be effective on January 1, 2021 and January 1, 2022 as shown in the table below, in order to enhance Metropolitan’s fiscal stability and ability to ensure the region’s long-term water supply while reasonably and fairly allocating the cost of providing service to its member agencies and other users of Metropolitan’s system:

Table 1. Rates and Charges

| Rates & Charges Effective January 1st | Current 2020 | Proposed 2021 | % Change | Proposed 2022 | % Change |
|--|-------------------------|--------------------------|-----------------|--------------------------|-----------------|
| Tier 1 Supply Rate (\$/AF) | \$208 | \$243 | 17% | \$243 | 0% |
| Tier 2 Supply Rate (\$/AF) | \$295 | \$285 | (3%) | \$285 | 0% |
| System Access Rate (\$/AF) | \$346 | \$373 | 8% | \$389 | 4% |
| Water Stewardship Rate (\$/AF)* | \$65 | — | (100%) | — | |
| System Power Rate (\$/AF) | \$136 | \$161 | 18% | \$167 | 4% |
| Full Service Untreated Volumetric Cost (\$/AF) | | | | | |
| Tier 1 | \$755 | \$777 | 3% | \$799 | 3% |
| Tier 2 | \$842 | \$819 | (3%) | \$841 | 3% |
| Treatment Surcharge (\$/AF) | \$323 | \$327 | 1% | \$344 | 5% |
| Full Service Treated Volumetric Cost (\$/AF) | | | | | |
| Tier 1 | \$1,078 | \$1,104 | 2% | \$1,143 | 4% |
| Tier 2 | \$1,165 | \$1,146 | (2%) | \$1,185 | 3% |
| Readiness-to-Serve Charge (\$M) | \$136 | \$130 | (4%) | \$140 | 8% |
| Capacity Charge (\$/cfs) | \$8,800 | \$10,700 | 22% | \$12,200 | 14% |
| Overall Rate Increase | | | 3.0% | | 4.0% |

Section 2. The Board finds and determines that the rates specified in Section 1 utilize the unbundled water rate and charge elements of the rate structure approved by Resolution 8774 and implemented by Resolution 8805, and that the cost of service process supporting the rates and charges specified in Section 1 is the cost of service process described in the 2020 Cost of Service report. The adopted rates and charges and cost of service reports will be on file and available for review by interested parties at Metropolitan’s headquarters.

Section 3. The Board finds and determines that the cost of service process reasonably, fairly and proportionately: (i) identifies revenue requirements; (ii) shows the costs of major service functions that Metropolitan undertakes, (iii) assigns costs to the service functions; (iv) allocates service function costs based upon use of and benefit from Metropolitan’s system, and (v) distributes costs to rates and charges based upon customary water industry standards. Accordingly, the Board finds that the cost of service process supports the rates and charges by creating a logical nexus between the costs and the revenues required and the rates and charges necessary to defray Metropolitan’s costs of providing its services and for use of its water system.

Section 4. The Board finds and determines that the rates specified in Section 1 are fixed by the Board pursuant to Sections 133 and 134 of the Act, and, so far as practicable, will result in revenue which, together with revenue from water standby or availability service charges or assessments, will pay

the operating expenses of Metropolitan, provide for repairs and maintenance, provide for payment of the purchase price or other charges for property or services or other rights acquired by Metropolitan, and provide for the payment of the interest and principal of its bonded debt. Actual revenues and expenses may vary from budgeted amounts for a variety of reasons, and Administrative Code Section 5202(e) contemplates variation in actuals to budget and provides policy guidance to the Board, and the Board finds and determines that Metropolitan's financial obligations may include liabilities and future commitments, such as retiree obligations and debt service, that are not reflected in the budget but that can be addressed in a fiscally prudent manner to reduce future obligations and keep future rate increases reasonable within the policy guidance provided by Administrative Code Section 5202(e).

Section 5. The Board finds and determines that the rates specified in Section 1, together with other revenues from Metropolitan's charges, ad valorem property taxes, and other miscellaneous revenue, do not exceed the reasonable and necessary cost of providing Metropolitan's water services for which the rates and charges are made, or of conferring the benefit provided, and is fairly apportioned to each member agency as specified in Section 6 below.

Section 6. The Board finds and determines that the respective per-acre-foot rates and charges specified in Section 1 are paid for the corresponding products or services and use of Metropolitan's water system, that Metropolitan provides such products or services directly to the member agencies or other users of Metropolitan's system that pay such rates and charges, and that such products or services are not provided to those not charged.

Section 7. The Board finds and determines that each of the rates specified in Section 1 are set for Metropolitan's services and are not levied for separate general revenue purposes.

Section 8. No later than its September 2020 meeting, the Board will review the biennial budget for fiscal years 2020/21 and 2021/22 that it adopted at its April 14, 2020 meeting and the rates in Section 1 to consider the impacts resulting from the COVID-19 crisis;

Section 9. Staff is directed to revisit and consider the following issues for the biennial budget cycle of fiscal years 2020/21 and 2021/22 by August 31, 2020:

- a. factor for unrealized staffing levels;
- b. consider revisiting advance recruitment for overlapping staffing positions, as part of succession planning;
- c. match CIP appropriations to the slowdown in expenditures;
- d. suspend the director inspection trip program;
- e. suspend fleet vehicle purchases; and
- f. plan for strategic use of reserves and financing.

Section 10. The General Manager and the General Counsel are hereby authorized to do all things necessary and desirable to accomplish the purposes of this Resolution, including, without limitation, the commencement or defense of litigation.

Section 11. If any provision of this is held invalid, that invalidity shall not affect other provisions of this Resolution which can be given effect without the invalid portion or application, and

to that end the provisions of this Resolution are severable.

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of a Resolution adopted by the Board of Directors of The Metropolitan Water District of Southern California, at its meeting held on April 14, 2020.

A handwritten signature in black ink that reads "Judy Abdo". The signature is written in a cursive style and is positioned above a solid horizontal line.

Secretary of the Board of Directors
of The Metropolitan Water District
of Southern California

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

RESOLUTION 9266

**RESOLUTION OF THE BOARD OF DIRECTORS
OF THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
FIXING AND ADOPTING
A READINESS-TO-SERVE CHARGE EFFECTIVE JANUARY 1, 2021**

The Board of Directors of The Metropolitan Water District of Southern California (the “Board”) hereby finds that:

1. Pursuant to Resolution 8774, the Board of The Metropolitan Water District of Southern California (“Metropolitan”) approved a rate structure proposal at its meeting on October 16, 2001, described in Board Letter 9-6, including a Readiness-To-Serve (“RTS”) Charge; and
2. Providing firm revenue sources is a goal of such rate structure; and
3. The amount of revenue to be raised by the RTS Charge shall be as determined by the Board and allocation of the RTS Charge among member public agencies (“member agencies”) shall be in accordance with the method established by the Board; and
4. The RTS Charge is a charge fixed and adopted by Metropolitan and charged to its member agencies, and is not a fee or charge imposed upon real property or upon persons as an incident of property ownership; and
5. Metropolitan has legal authority to fix and adopt such RTS Charge as a water rate pursuant to Sections 133 and 134 of the Metropolitan Water District Act (the “Act”), and to fix it as an availability of service charge pursuant to Section 134.5 of the Act; and
6. Under authority of Sections 133 and 134 of the Act, the Board has the authority to fix the rate or rates for water as will result in revenue which, together with other revenues, will pay Metropolitan’s operating expenses and provide for payment of other costs, including payment of the interest and principal of Metropolitan’s non-tax funded bonded debt; and
7. The RTS Charge recovers the capital expenditures for infrastructure projects needed to provide emergency storage capacity and available capacity needed to maintain reliable deliveries during outages and service interruptions and during periods of hydrologic variability; and
8. Pursuant to Resolution 8329, adopted by the Board on July 9, 1991, and Resolution 9199, adopted by the Board on March 8, 2016, and as each is thereafter amended and supplemented, proceeds of the RTS Charge and other revenues from the sale or availability of water are pledged to the payment of Metropolitan’s outstanding revenue bonds and to the payment of Metropolitan’s outstanding subordinate revenue bonds and to revenue bonds and subordinate bonds to be issued pursuant to Resolution 8329 and Resolution 9199; and

9. Under authority of Section 134.5 of the Act, an RTS Charge levied as an availability of service charge may be collected from the member agencies within Metropolitan, or may continue to be collected as a standby charge against individual parcels within Metropolitan's service area; and

10. Certain member agencies of Metropolitan have opted in prior fiscal years to provide collection of all or a portion of their RTS Charge obligation through a Metropolitan water standby charge ("Standby Charge") levied on parcels within those member agencies; and

11. Under authority of Section 134.5 of the Act, the Standby Charge may continue to be levied on each acre of land or each parcel of land less than an acre within Metropolitan to which water is made available for any purpose by Metropolitan, whether the water is actually used or not; and

12. Metropolitan is willing to comply with the requests of member agencies opting to have Metropolitan continue to levy the Standby Charge within their respective territories, on the terms and subject to the conditions contained herein; and

13. In *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.*, San Francisco Superior Court Case Nos. CPF-16-515282, CPG-17-563350, and CPF-18-516389 (the "2016, 2017, and 2018 Cases", collectively), the San Diego County Water Authority challenged Metropolitan's water charges adopted on April 12, 2016, April 11, 2017, and on April 10, 2018, respectively, and also challenged Metropolitan's rates. Metropolitan is defending such challenges; and

14. Metropolitan maintains that its rates and charges are appropriate. There is no final judgment in the identified cases and Metropolitan does not anticipate a final judgment in CY 2021; and

15. On April 14, 2020, the Board considered the rates and charges presented by the General Manager and approved the biennial budget for fiscal years 2020/21 and 2021/22 and adopted recommended water rates for calendar years 2021 and 2022 and charges for calendar year 2021, and received information and documents available at <http://mwdh2o.com/WhoWeAre/Pages/FY-2020-21-and-2021-22-CY-2021-22.aspx> and <http://mwdh2o.com/WhoWeAre/Mission/Pages/review-applicability-of-property-tax-limit.aspx>; and

16. In approving the Proposed Biennial Budget and adopting the rates and charges on April 14, 2020, the Board determined the amount of revenue to be raised by the RTS Charge in calendar year 2021 to be \$130,000,000, based on information and documents available at <http://mwdh2o.com/WhoWeAre/Pages/FY-2020-21-and-2021-22-CY-2021-22.aspx> and <http://mwdh2o.com/WhoWeAre/Mission/Pages/review-applicability-of-property-tax-limit.aspx>. The amount of the RTS Charge was updated from the recommendation in the 2020 Cost of Service Report, to reflect modifications made to respond to the COVID-19 pandemic and the effect of PFAS/PFOS will have on certain projections. However, the COS methodology remains the same; and

17. Written notice of intention of Metropolitan's Board to consider and take action at its regular meeting of April 14, 2020, to adopt Metropolitan's RTS Charge for calendar year 2021 was given to each of Metropolitan's member agencies; and

18. The RTS Charge for calendar year 2021 applicable to each member agency is reflected in the Engineer's Report dated April 2020 and its method of its calculation and the specific data used in its determination are as specified in the cost of service report. Following modifications made by staff to the budget due to changed conditions resulting from COVID-19 pandemic and the PFAS/PFOS

effect on groundwater basins, the RTS Charge was updated accordingly. The updated RTS Charge continues to be supported by the Engineer's Report provided to the Board; and

19. Each of the meetings of the Board were conducted in accordance with the Brown Act (commencing at Section 54950 of the Government Code), for which due notice was provided and at which quorums were present and acting throughout;

NOW, THEREFORE, the Board does hereby resolve, determine and order as follows:

Section 1. That the Board hereby fixes and adopts an RTS Charge for the period from January 1, 2021, through December 31, 2021.

Section 2. That said RTS Charge shall be in an amount sufficient to provide for payment of debt service not paid from *ad valorem* property taxes, and other appropriately allocated costs, for capital expenditures for infrastructure projects needed to provide emergency storage capacity and available capacity needed to maintain reliable deliveries during outages and service interruptions and during periods of hydrologic variability.

Section 3. That such RTS Charge for January 1, 2021, through and including December 31, 2021, shall be in the amounts specified in Section 4, which shall be determined on a historic basis for each acre-foot of water, excluding water sales of reclaimed water under the Local Projects Program, and Local Resources Program, groundwater under the Groundwater Recovery Program, and Local Resources Program, groundwater under the Groundwater Recovery Program and deliveries under Replenishment and Interim Agricultural Water, included in Metropolitan's average water deliveries to its member agencies for the applicable ten-year period identified in Section 4. The aggregate RTS Charge for the period from January 1, 2021, through and including December 31, 2021 shall also be as specified in Section 4.

Section 4. That the RTS Charge for January 1, 2021, through December 31, 2021, shall be allocated among the member agencies in proportion to the average of deliveries through Metropolitan's system (in acre- feet) to each member agency during the ten-year period ending June 30, 2019. Metropolitan sales of reclaimed water under the Local Projects Program, groundwater under the Groundwater Recovery Program, and deliveries under the Replenishment and Interim Agricultural Water Service Programs are not included in the RTS Charge water sales calculation. The allocation of the RTS Charge among member agencies is based on sales data recorded by Metropolitan and shall be conclusive in the absence of manifest error.

The amount of the RTS Charge to be charged to each member agency effective January 1, 2021, is as follows:

Schedule 1

Calendar Year 2021 Readiness-To-Serve Charge

| Calendar Year 2021 RTS Charge | | | |
|---|---|------------------|--|
| Member Agency | Rolling Ten-Year Average Firm Deliveries (Acre-Feet) FY2009/10 - FY2018/19 | RTS Share | 12 months @ \$130 million per year (1/21-12/21) |
| Anaheim | 17,327.0 | 1.17% | \$ 1,526,562 |
| Beverly Hills | 10,447.3 | 0.71% | 920,439 |
| Burbank | 12,323.6 | 0.84% | 1,085,747 |
| Calleguas MWD | 97,187.9 | 6.59% | 8,562,554 |
| Central Basin MWD | 42,103.2 | 2.85% | 3,709,422 |
| Compton | 779.3 | 0.05% | 68,659 |
| Eastern MWD | 94,362.5 | 6.40% | 8,313,628 |
| Foothill MWD | 8,395.4 | 0.57% | 739,661 |
| Fullerton | 8,125.5 | 0.55% | 715,882 |
| Glendale | 16,548.0 | 1.12% | 1,457,930 |
| Inland Empire Utilities Agency | 56,560.7 | 3.83% | 4,983,172 |
| Las Virgenes MWD | 20,448.6 | 1.39% | 1,801,585 |
| Long Beach | 30,374.2 | 2.06% | 2,676,061 |
| Los Angeles | 269,779.5 | 18.28% | 23,768,407 |
| Municipal Water District of Orange County | 207,817.5 | 14.08% | 18,309,363 |
| Pasadena | 18,839.6 | 1.28% | 1,659,827 |
| San Diego County Water Authority | 258,318.0 | 17.51% | 22,758,613 |
| San Fernando | 35.6 | 0.00% | 3,136 |
| San Marino | 837.7 | 0.06% | 73,804 |
| Santa Ana | 10,780.4 | 0.73% | 949,787 |
| Santa Monica | 5,511.2 | 0.37% | 485,554 |
| Three Valleys MWD | 62,229.1 | 4.22% | 5,482,576 |
| Torrance | 15,990.2 | 1.08% | 1,408,786 |
| Upper San Gabriel Valley MWD | 26,406.0 | 1.79% | 2,326,450 |
| West Basin MWD | 115,327.9 | 7.82% | 10,160,744 |
| Western MWD | 68,688.3 | 4.66% | 6,051,651 |
| MWD Total | 1,475,544.2 | 100.00% | \$130,000,000 |

Totals may not foot due to rounding

The General Manager shall establish and make available to member public agencies procedures for administration of the readiness-to-serve charge, including filing and consideration of applications for reconsideration of their respective readiness-to-serve charge. The General Manager shall review any applications for reconsideration submitted in a timely manner. The General Manager shall also establish reasonable procedures for the filing of appeals from his determination.

Section 5. That the RTS Charge specified in Schedule 1, together with other revenues from Metropolitan’s water rates, other charges, ad valorem property taxes, and other miscellaneous revenue, does not exceed the reasonable and necessary cost of providing Metropolitan’s water services for which the rates and charges are made, or of conferring the benefit provided, and is fairly apportioned to each member agency as specified in Section 6 below.

Section 6. That water conveyed through Metropolitan's system for the purposes of water transfers, exchanges or other similar arrangements shall be included in the calculation of a member agency's rolling ten- year average firm demands used to allocate the RTS Charge.

Section 7. That the RTS Charge and the amount applicable to each member agency, the method of its calculation, and the specific data used in its determination are as specified in the adopted rates and charges to be effective January 1, 2021, which forms the basis of the RTS Charge, and the corresponding 2020 Cost of Service Report. The adopted rates and charges and cost of service reports are on file and available for review by interested parties at Metropolitan's headquarters.

Section 8. That except as provided in Section 10 below with respect to any RTS Charge collected by means of the Standby Charge, the RTS Charge shall be due monthly, quarterly or semiannually as agreed upon by Metropolitan and the member agency.

Section 9. That such RTS Charge may, at the request of any member agency which elected to utilize the Standby Charge as a mechanism for collecting the RTS Charge obligation in fiscal year 1996/97, be collected by continuing the Standby Charge at rates not to exceed rates levied in fiscal year 1996/97 upon land within Metropolitan's (and such member agency's) service area to which water is made available by Metropolitan for any purpose, whether such water is used or not.

Section 10. That the Standby Charge shall be collected on the tax rolls, together with the *ad valorem* property taxes which are levied by Metropolitan for the payment of pre-1978 voter-approved indebtedness. Any amounts so collected shall be applied as a credit against the applicable member agency's RTS Charge obligation. After such member agency's RTS Charge allocation is fully satisfied, any additional collections shall be credited to other outstanding obligations of such member agency to Metropolitan that funds the capital costs or maintenance and operation expenses for Metropolitan's water system, or future RTS Charge obligations of such agency. Notwithstanding the provisions of Sections 8 and 9 above, any member agency requesting to have all or a portion of its RTS Charge obligation collected through Standby Charge levies within its territory as provided herein shall pay any portion not collected through net Standby Charge collections to Metropolitan within 50 days after Metropolitan issues an invoice for remaining RTS Charge obligations for such member agency, as provided in Administrative Code Section 4507.

Section 11. That notice is hereby given to the public and to each member agency of The Metropolitan Water District of Southern California of the intention of Metropolitan's Board to consider and take action at its regular meeting to be held May 12, 2020 (or such other date as the Board shall hold its regular meeting in such month), on the General Manager's recommendation to continue the Standby Charge for fiscal year 2020/21 under authority of Section 134.5 of the Act on land within Metropolitan at rates not to exceed rates, per acre of land, or per parcel of land less than an acre, levied in fiscal year 1996/97 upon land within Metropolitan's (and such member agency's) service area. Such Standby Charge will be continued as a means of collecting the RTS Charge.

Section 12. That no failure to collect, and no delay in collecting, any Standby Charge shall excuse or delay payment of any portion of the RTS Charge when due.

Section 13. That the RTS Charge is fixed and adopted by Metropolitan as a rate or charge on its member agencies, and is not a fee or charge imposed upon real property or upon persons as incidents of property ownership, and the Standby Charge is collected within the respective territories of electing member agencies as a mechanism for collection of the RTS Charge. In the event that the Standby Charge, or any portion thereof, is determined to be an unauthorized or invalid fee, charge or assessment

by a final judgment in any proceeding at law or in equity, which judgment is not subject to appeal, or if the collection of the Standby Charge shall be permanently enjoined and appeals of such injunction have been declined or exhausted, or if Metropolitan shall determine to rescind or revoke the Standby Charge, then no further Standby Charge shall be collected within any member agency and each member agency which has requested continuation of the Standby Charge as a means of collecting its RTS Charge obligation shall pay such RTS Charge obligation in full, as if continuation of such Standby Charge had never been sought.

Section 14. That the General Manager and the General Counsel are hereby authorized to do all things necessary and desirable to accomplish the purposes of this Resolution, including, without limitation, the commencement or defense of litigation.

Section 15. That if any provision of this Resolution or the application to any member agency, property or person whatsoever is held invalid, that invalidity shall not affect other provisions or applications of this Resolution which can be given effect without the invalid portion or application, and to that end the provisions of this Resolution are severable.

Section 16. That the General Manager is hereby authorized and directed to take all necessary action to satisfy relevant statutes requiring notice by mailing or by publication.

Section 17. That the Board Executive Secretary is hereby directed to transmit a certified copy of this Resolution to the presiding officer of the governing body of each member agency.

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of a Resolution adopted by the Board of Directors of The Metropolitan Water District of Southern California, at its meeting held on April 14, 2020.

A handwritten signature in black ink that reads "Judy Abdo". The signature is written in a cursive style and is positioned above a horizontal line.

Secretary of the Board of Directors
of The Metropolitan Water District
of Southern California

**THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
ENGINEER'S REPORT**

**PROGRAM TO SET A READINESS-TO-SERVE CHARGE EFFECTIVE JANUARY 1, 2021,
INCLUDING LOCAL OPTION TO CONTINUE COLLECTING A STANDBY CHARGE,
DURING FISCAL YEAR 2020/21**

April 2020

BACKGROUND

The Metropolitan Water District of Southern California is a public agency with a primary purpose to provide imported wholesale water service for domestic and municipal uses to its 26 member public agencies. Approximately 19 million people reside within Metropolitan's service area, which covers approximately 5,200 square miles and includes portions of the six counties of Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura. Metropolitan historically provided between 40 and 60 percent of the water used within its service area. To supply Southern California with reliable and safe water, Metropolitan imports water from the Colorado River and Northern California to supplement its member agencies' local supplies, and helps its member agencies develop increased water conservation, recycling, storage and other local resource programs.

REPORT PURPOSES

As part of its role as a regional imported water supplier, Metropolitan builds capital facilities and implements water management programs that ensure the delivery of reliable high-quality water supplies throughout its service area. The purpose of this report is to: (1) identify and describe those facilities and programs that will be financed in part by Metropolitan's Readiness-to-Serve (RTS) Charge, and (2) describe the method and basis for levying Metropolitan's Standby Charge for those agencies electing to continue to collect a portion of their RTS obligation through Metropolitan's Standby Charge in fiscal year 2020/21. **Because the Standby Charge is levied and collected on a fiscal year basis the calculations in this report also are for the fiscal year, even though the RTS Charge is levied on a calendar year basis.** The RTS Charge for calendar year 2020 was adopted by Metropolitan's Board on April 9, 2019 and the RTS Charge for 2021 will be considered by the Board on April 14, 2020. The Board will consider the continuation of the Standby Charge for fiscal year 2020/21 on May 12, 2020.

Metropolitan collects the RTS Charge from its member agencies to recover a portion of the capital costs including debt service on bonds issued to finance capital facilities needed to meet demands on Metropolitan's system for emergency storage and available capacity to meet outages and hydrologic variability. The Standby Charge is collected from parcels of land within Metropolitan's member agencies that have elected to collect all or a portion of their RTS obligation through the Standby Charge, as a method of recovering the costs of special benefits conferred on parcels within their service area. The RTS Charge will partially pay for the facilities and programs described in this report, namely, the amount attributable to the portions providing emergency storage and available capacity to meet outages and hydrologic variability. The Standby Charge, when collected, will be utilized solely for capital payments and debt service on the capital facilities funded by the RTS Charge, as identified in this report.

The budgeted total RTS revenue for fiscal year 2020/21 is \$130 million, of which \$43.8 million is estimated to be collected via the Standby Charge. The Standby Charge is collected on property tax bill.

METROPOLITAN'S RESPONSE TO FLUCTUATING WATER DEMANDS AND AVAILABILITY OF WATER SOURCES

Metropolitan's member agencies have widely differing imported water supply needs and the availability of imported water supply from various sources also varies widely. Some agencies have no local water resources and rely on Metropolitan for 100 percent of their annual water needs. Other agencies have adequate local surface supplies and storage and/or groundwater basins that provide them with the majority of their water supplies during wet and average years. However, during dry periods and/or based on a variety of other factors, these agencies rely on Metropolitan to make up any shortfalls in local water supplies. Similar coordination challenges arise in managing water available from Metropolitan's various water supply sources.

To respond to fluctuating demands for water, Metropolitan and its member agencies collectively examined the available local and imported resource options in order to develop a least-cost plan that meets the reliability and quality needs of the region. The product of this intensive effort was an Integrated Resources Plan (IRP) for achieving a reliable and affordable water supply for Southern California. The major objective of the IRP was to develop a comprehensive water resources plan that ensures (1) reliability, (2) affordability, (3) water quality, (4) diversity of supply, and (5) adaptability for the region, while recognizing the environmental, institutional, and political constraints to resource development. As these constraints change over time, the IRP is periodically revisited and updated by Metropolitan and the member agencies to reflect current conditions. To meet the water supply needs of the region, Metropolitan continues to identify and develop additional water supplies to maintain the reliability of the imported water supply and delivery system to its member agencies. These efforts include the construction of capital facilities and implementation of demand management programs. The demand management programs offset the need to transport or store additional water into or within the Metropolitan service area, thus avoiding and deferring the need for additional infrastructure construction, operation, and maintenance, saving such costs; and freeing up capacity in the system.

CAPITAL FACILITIES - CONVEYANCE AND DISTRIBUTION

Metropolitan's total water system has been built over time to meet the widely differing needs of its member agencies and the various sources of water available to Metropolitan. To meet those needs, Metropolitan's water delivery system is comprised of three basic conveyance and delivery components that form one integrated water system:

- State Water Project (SWP);
- Colorado River Aqueduct (CRA); and
- Distribution System

The system draws on diverse supply sources, transports water across a large part of the State and distributes water in six counties, where member agencies or their retail sub-agencies serve an estimated 19 million people. The CRA and the California Aqueduct of the SWP convey imported water into the Metropolitan service area. This water is then delivered to Metropolitan's member agencies via a regional network of canals, pipelines, and appurtenant facilities, which constitute the Distribution System. Supply, treatment, and storage facilities augment the Distribution System. The system is an interconnected regional conveyance and distribution system with the ability to deliver supplies from each of the SWP, the CRA, and its storage portfolio throughout its vast and diverse service area to almost every member agency. This flexibility derives from the capital facilities and provides local and system-wide benefits to all member agencies, as the facilities directly contribute to the reliable delivery of water supplies throughout Metropolitan's service area.

As the 2007 Integrated Area Study (IAS) emphasized, regional system flexibility is a key component of overall reliability.¹ Today, system flexibility continues to be essential to the availability of Metropolitan's services.² Metropolitan must maintain operational flexibility-the ability to respond to short-term changes in regional water supply, water quality, treatment requirements, and member agency demands. Metropolitan must maintain delivery flexibility-the ability to maintain partial to full water supply deliveries during planned and unplanned facility outages. Metropolitan is also required by state statute to serve as large an area as is determined to be reasonable and practical with SWP water; and where a blend of water sources is served, to have the objective to the extent determined to be reasonable and practical, that at least 50 percent of the blend be SWP water. (MWD Act, Sec. 136.)

Operational flexibility has been achieved by creating an interconnected regional delivery network integrating the SWP and the CRA conveyance systems with the Distribution System. This integrated network allows Metropolitan to incorporate supply from the SWP and the CRA with a diverse portfolio of geographically dispersed storage programs, including the Central Valley groundwater storage programs, carryover storage in San Luis Reservoir, flexible storage capacity in Castaic Lake and Lake Perris, Lake Mead storage, the Desert Water Agency/Coachella Valley Water District Advanced Delivery account, in-basin surface storage in Diamond Valley Lake and Lake Mathews, and in-basin groundwater Conjunctive Use Programs. This integrated, regional network also allows Metropolitan to move supplies throughout the system in response to service demands, supply availability and operational needs.

Therefore, each of Metropolitan's integrated conveyance, distribution and storage assets contributes to regional system reliability. It is fair and reasonable for member agencies and all property owners within the service area to share the cost of developing and maintaining these assets because they all benefit from regional system reliability.

State Water Project Description and Benefits

One of Metropolitan's two major sources of water is the SWP.³ The SWP 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 SWP consists of a complex system of dams, reservoirs, power plants, pumping plants, canals and aqueducts to deliver water. See Figure 1. SWP water consists of water from rainfall and snowmelt runoff that is captured and stored in SWP conservation facilities and then delivered through SWP transportation facilities to water agencies and districts located throughout the Upper Feather River, Bay Area, Central Valley, Central Coast, and Southern California. In addition to the delivery of SWP water, the SWP is also used to convey transfers of SWP water and non-SWP water. Metropolitan receives water from the SWP through the California Aqueduct, which is 444 miles long, and at four delivery points near the northern and eastern boundaries of Metropolitan's service area.

¹ 2007 Integrated Area Study, Report No. 1317, pg. 2-10.

² 2020 Annual Operating Plan

³ For historical and current information regarding the SWP, refer to Bulletin 132, published periodically by DWR since 1963. The most recently published Bulletin is Bulletin 132-17 dated January 2019 and titled "Management of the California State Water Project."

Figure 1. Facilities of the State Water Project



The SWP is managed and operated by the Department of Water Resources (DWR). All water supply-related capital expenditures and operations, maintenance, power and replacement (OMP&R) costs associated with the SWP conservation and transportation facilities are paid for by 29 agencies and districts, known collectively as the State Water Contractors (Contractors). The Contractors are participants in the SWP through long-term contracts for the delivery of SWP water and use of the SWP transportation facilities.

In 1960, Metropolitan signed the first water supply contract (as amended, the State Water Contract) with DWR. In addition to SWP water, Metropolitan also obtains water from water transfers, groundwater banking and exchange programs delivered through the California Aqueduct.

Since 1960, the SWP system has been extended, improved, and refurbished. All such costs are payable by the Contractors. On October 10, 2017, Metropolitan's Board voted to support financing for the California WaterFix project. California WaterFix was a comprehensive science-based solution proposed by the state to modernize critical water delivery infrastructure of the SWP. At the time of the Metropolitan Board's approval, the project proposed construction of new water intakes in the north Delta and two 40-foot diameter tunnels under the Delta terminating at a forebay in the south Delta. The estimated cost of the project, at the time of Metropolitan Board's approval, was \$17 billion in 2017 dollars, with Metropolitan's share about 26% of that, or \$4.3 billion. Metropolitan's biennial budget for fiscal years 2018/19 and 2019/20 included costs of \$4 million and \$13 million for each fiscal year, respectively. On July 10, 2018, the Metropolitan Board approved increased funding for up to about a 65% share of the project.

On April 29, 2019, Governor Newsom issued an executive order directing State agencies to develop a comprehensive statewide strategy to build a climate-resilient water system that included consideration of a single-tunnel Delta conveyance facility instead of the approved two-tunnel WaterFix project. In light of this order, DWR and the State Water Contractors embarked on a new public process to further negotiate proposed amendments related to cost allocation for a potential new Bay-Delta conveyance project. **As a result, the costs of any such new project are yet unknown and Metropolitan's projected up to \$10.8 billion costs for California WaterFix are no longer included in its current or future budgeting or projections.** Metropolitan's biennial budget for fiscal years 2020/21 and 2021/22 includes its planned contribution of \$25 million per year towards DWR's planning costs of a new Delta conveyance project.

All Metropolitan member agencies benefit from the SWP system and its supplies, which can be distributed to all member agencies. Metropolitan's member agencies distribute that water to parcels as retail water providers or as wholesale water providers to retail agencies. In this way, the SWP water that Metropolitan delivers to its member agencies contributes to water available to existing and future end users throughout Metropolitan's service area. The cost of the net capital payments for the SWP less the portion covered by property taxes in fiscal year 2020/21 is \$41.8 million, as shown in Table 1. Real property throughout Metropolitan's service area benefits from the availability of the SWP facilities and its integration into Metropolitan's system and therefore all such costs may be attributed to such parcels. However, Metropolitan's Standby Charge collects only \$43.8 million of the total \$284.2 million system costs, representing 15% of the total system costs.

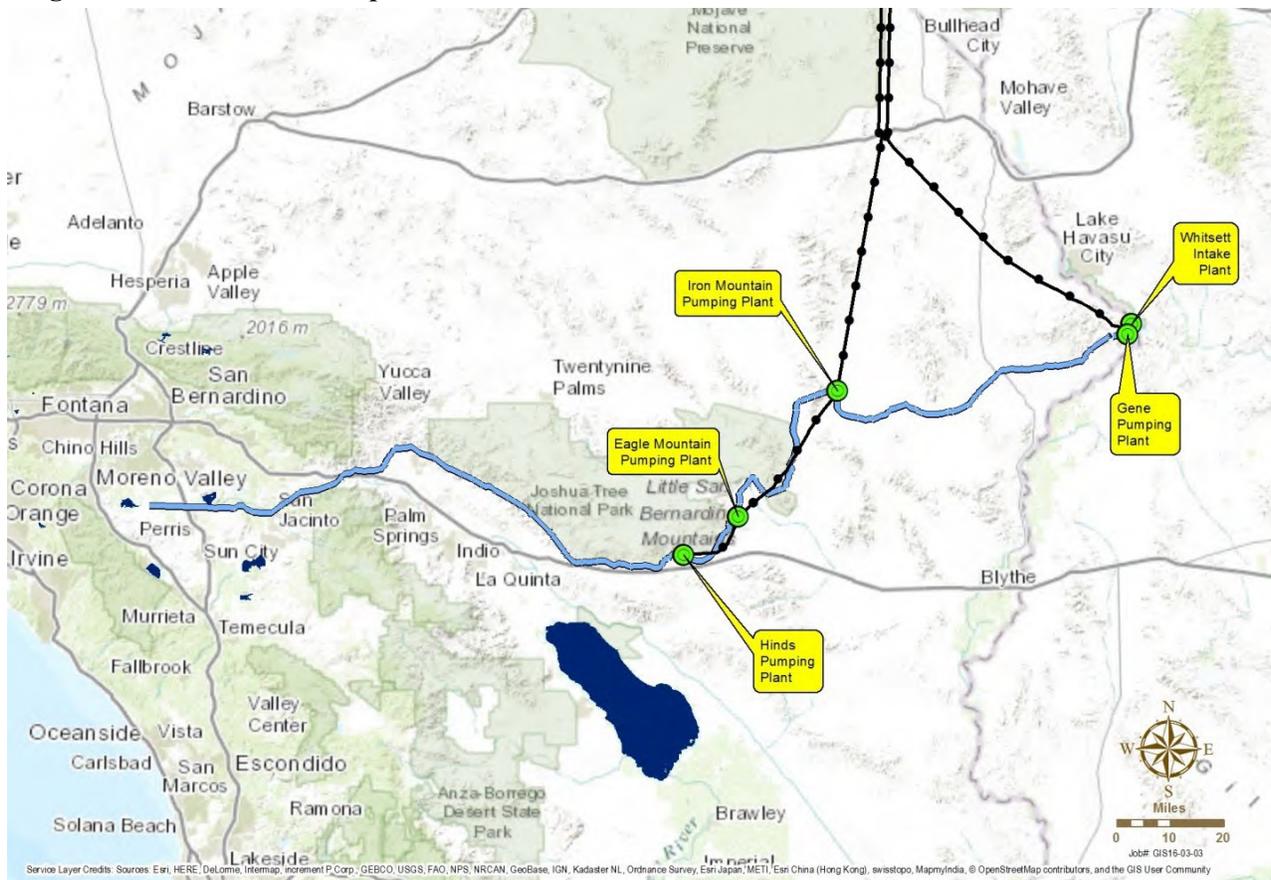
Colorado River Aqueduct Description and Benefits

Metropolitan's other major source of water is the CRA. Metropolitan was established to obtain an allotment of Colorado River water, and its first mission was to construct and operate the CRA. The CRA consists of five pumping plants, 450 miles of high voltage power lines, one electric substation, four

regulating reservoirs, and 242 miles of aqueducts, siphons, canals, conduits and pipelines terminating at Lake Mathews in Riverside County. See Figure 2. Metropolitan owns, operates, and manages the Colorado River Aqueduct. Metropolitan is responsible for operating, maintaining, rehabilitating, and repairing the CRA, and is responsible for obtaining and scheduling energy resources adequate to power pumps at the CRA's five pumping stations.

Metropolitan incurs capital and operations and maintenance expenditures to support the CRA activities. The direct costs of the CRA activities include labor, materials and supplies, as well as outside services to provide repair and maintenance, and professional services. The CRA activities benefit from Water System Operations support services and management supervision, as well as Administrative and General activities of Metropolitan. Metropolitan finances past, current and future capital improvements on the CRA, and capitalizes those improvements as assets. The costs of Metropolitan's capital financing activities are apportioned to cost functions, such as the CRA Conveyance and Aqueduct function. The capital cost of the Colorado River Aqueduct and Inland Feeder in fiscal year 2020/21 is \$74.6 million, and is included in the Non-SWP Conveyance System line item in Table 1. Real property throughout Metropolitan's service area benefits from the availability of the CRA facilities and its integration into Metropolitan's system and therefore all such costs may be attributed to such parcels. However, Metropolitan's Standby Charge collects only \$43.8 million of the total \$284.2 million system costs, representing 15% of the total system costs.

Figure 2. Colorado River Aqueduct



Metropolitan's Conveyance and Distribution System Benefits

For purposes of this report, components of the conveyance system are considered to include only those

major trunk facilities that transport water from primary supply sources to either regional storage facilities or feeder lines linked to the primary conveyance facilities. See Figure 3. For a list of Metropolitan’s conveyance facilities within its service area, see Table 3. All other water transport facilities, including pipelines, feeders, laterals, canals and aqueducts, are considered to be distribution facilities. Distribution facilities can be further identified in that they generally have at least one connection to a member agency's local distribution system. For a list of Metropolitan’s distribution facilities, see Table 3.

All water transport facilities not specifically identified as part of the regional conveyance system are considered to be distribution facilities (Distribution System). While conveyance and aqueduct system components are regional in nature and generally do not link directly to local agency distribution systems, Distribution System facilities do ultimately connect to local agency systems. As a result, these facilities rely on conveyance and aqueduct facilities to import water from regional supply sources. The Distribution System is a complex network of facilities which routes water from the CRA and SWP to the member agencies. Beginning at the terminal delivery points of the CRA and SWP, Metropolitan's Distribution System includes approximately 775 miles of pipelines, feeders, and canals. Distribution System operations are coordinated from the Operations Control Center in Eagle Rock. The control center plans, schedules, and balances daily water operations in response to member agency demands and the operational limits of the system as a whole. Metropolitan’s storage and treatment facilities augment the Distribution System. Metropolitan operates and maintains separate untreated and treated distribution facilities.

Figure 3. Metropolitan’s Distribution and Storage Facilities



Metropolitan has an ongoing commitment, through physical system improvements and the maintenance and rehabilitation of existing facilities, to maintain the reliable delivery of water throughout the entire service area. System improvement projects include additional conveyance and distribution facilities to maintain the dependable delivery of water supplies, provide alternative system delivery capacity, and enhance system operations. Conveyance and distribution system improvement benefits also include projects to upgrade obsolete facilities or equipment, or to rehabilitate or replace facilities or equipment. These projects are needed to enhance system operations, comply with new regulations, and maintain a reliable distribution system. A list of conveyance and distribution system facilities is provided in Table 3 along with the fiscal year 2020/21 estimated conveyance and distribution system benefits. The capital cost of the Distribution System in fiscal year 2020/21 is \$70.4 million, and is included in the Distribution System line item in Table 1. Real property throughout Metropolitan's service area benefits from the availability of the Distribution System and its integration into Metropolitan's system and therefore all such costs may be attributed to such parcels. However, Metropolitan's Standby Charge collects only \$43.8 million of the total \$284.2 million system costs, representing 15% of the total system costs.

CAPITAL FACILITIES - WATER STORAGE

System Storage Benefits

The Metropolitan system, for purposes of meeting demands during times of shortage, regulating system flows, and ensuring system reliability in the event of a system outage, provides over 1,000,000 acre-feet of system storage capacity. Diamond Valley Lake provides 810,000 acre-feet of that storage capacity, effectively doubling Southern California's previous surface water storage capacity. Other existing imported water storage available to the region consists of Metropolitan's raw water reservoirs, a share of the SWP's raw water reservoirs in and near the service area, and the portion of the groundwater basins used for conjunctive-use storage.

Water stored in system storage during above average supply conditions (surplus) provides a reserve against shortages when supply sources are limited or disrupted. Water storage also preserves Metropolitan's capability to deliver water during scheduled maintenance periods, when conveyance facilities must be removed from service for rehabilitation, repair, or maintenance. The benefits of these capital facilities are both local and system-wide, as the facilities directly contribute to the reliable delivery of water supplies throughout Metropolitan's service area. The capital costs of water storage in fiscal year 2020/21 is \$97.4 and, as shown in Table 1. Real property throughout Metropolitan's service area benefits from the availability of the storage capacity throughout the service area and its integration into Metropolitan's system and therefore all such costs may be attributed to such parcels. However, Metropolitan's Standby Charge collects only \$43.8 million of the total \$284.2 million system costs, representing 15% of the total system costs.

DEMAND MANAGEMENT PROGRAMS

Demand management programs include local water resource development programs and water conservation programs. These demand management programs incentivize the development of local water supplies and the conservation of water to reduce the reliance on the delivery of imported water. These programs are implemented after the service connection between Metropolitan and its member agencies and, as such, do not add any water to the quantity Metropolitan obtains from other sources or to Metropolitan's own supply. Rather, the effect of these downstream programs in terms of water supply is to produce or conserve a local supply of water for the local agencies. The financial effect for Metropolitan is to avoid and defer the need for additional infrastructure construction, operation, and

maintenance, thus contributing to infrastructure savings for all users of the system. The programs also free up conveyance capacity in the system to the benefit of all system users.

Therefore, investments in demand side management programs like conservation, water recycling and groundwater recovery help to increase regional water supply reliability, reduce demands for imported water supplies, decrease the burden on the district's infrastructure and reduce system costs, and free up conveyance capacity to the benefit of all system users. The total budgeted costs of the demand management programs in fiscal year 2020/21 is \$48.5 million, but are not included in Table 1 for this report. Metropolitan's Board suspended the billing and collection of the WSR for calendar years 2018, 2019, and 2020 on exchange deliveries to SDCWA pending Metropolitan's completion of a cost allocation study of its demand management costs. Having completed the demand management cost allocation process, in December 2019 Metropolitan's Board directed staff: (1) to incorporate the use of the 2019/20 fiscal-year-end balance of the Water Stewardship Fund to fund all demand management costs in the proposed FY 2020/21 and 2021/22 biennial budget; and (2) to not incorporate the WSR, or any other rates or charges to recover demand management costs, with the proposed rates and charges for CYs 2021 and 2022. Thus, the portion of the demand management program costs that should be functionalized as conveyance, storage, and distribution infrastructure costs for purposes of Table 1 has not yet been determined. However, even without such costs, Metropolitan's infrastructure costs exceed the revenue collected pursuant to the RTS Charge.

Local Resources Program Benefits

In 1982, Metropolitan's Board adopted the Local Resources Program (LRP) with the goal of developing local water resources in a cost-efficient manner. Financial incentives are provided to member agency-sponsored projects that best help the region achieve its local resource production goals of restoring degraded groundwater resources for potable use as well as developing recycled water and seawater desalination supplies. These projects provide new water supplies within Metropolitan's service area, which, as explained, help to increase regional water supply reliability, reduce demands for imported water supplies, decrease the burden on the district's infrastructure and reduce system costs, and free up conveyance capacity to the benefit of all system users.

In 1999, the California Legislature and Governor recognized the regional benefit of demand management programs by enacting Senate Bill 60, which states: "It is the intent of the Legislature that the Metropolitan Water District of Southern California expand water conservation, water recycling, and groundwater recovery efforts" and "The Metropolitan Water District of Southern California shall place increased emphasis on sustainable, environmentally sound, and cost-effective water conservation, recycling, and groundwater storage and replenishment measures." (MWD Act, Sec. 130.5.)

Combined production from participating recycling and groundwater recovery projects produced approximately 188,000 acre-feet of water in fiscal year 2018/19 with financial incentive payments of about \$29 million. Regional recycling, recovered groundwater, and desalinated seawater production are projected to be about 618,000 acre-feet per year, by year 2025. An estimate of the costs of the program in fiscal year 2020/21 as measured by Metropolitan's estimated incentive payments for recycling and groundwater recovery projects is shown in Table 2.

Water Conservation Benefits

Metropolitan actively promotes water conservation programs within its service area as a cost-effective strategy for ensuring the long-term reliability of supplies and as a means of reducing the need to increase imported supplies and offset the need to transport or store additional water into or within the Metropolitan service area. Through the Conservation Credits Program, Metropolitan provides financial

incentives in regional conservation programs and also reimburses local agencies for a share of their costs of implementing their own conservation programs. Since fiscal year 1990/91, Metropolitan has spent over \$798 million in financial incentives to support regional and local conservation projects.

The actual conservation of water takes place at the retail consumer level. Regional conservation approaches have proven to be effective at reaching retail consumers throughout the service area and successfully implementing water saving devices, programs and practices. Regional investments in demand management programs, of which conservation is a key part along with local supply programs, benefit all member agencies regardless of project location. These programs help to increase regional water supply reliability, reduce demands for imported water supplies, decrease the burden on the district's infrastructure and reduce system costs, and free up conveyance capacity to the benefit of all system users. Thus, water conservation, as a demand management program, contributes to transportation infrastructure savings for all users of the regional water system.

Through fiscal year 2018/19, Metropolitan's Conservation Credits Program has saved over 2,976,000 acre-feet since inception. In order to comply with the Governor's mandate of reducing demand by 20 percent by the year 2020, Metropolitan has continued to increase its conservation efforts to meet that mandate.

In 1999, the California Legislature and Governor recognized the regional benefit of conservation, as well as local supply development, by enacting Senate Bill 60 which states: "It is the intent of the Legislature that the Metropolitan Water District of Southern California expand water conservation, water recycling, and groundwater recovery efforts" and "The Metropolitan Water District of Southern California shall place increased emphasis on sustainable, environmentally sound, and cost-effective water conservation, recycling, and groundwater storage and replenishment measures." (MWD Act, Sec. 130.5.) An estimate of the costs of water conservation programs as measured by Metropolitan's incentive payments is given in Table 2.

METROPOLITAN'S REVENUE

Metropolitan's major capital facilities are financed largely from the proceeds of revenue bond issues, which are repaid over future years. The principal source of revenue for repayment of these bonds is water sales to its member agencies, which is currently Metropolitan's largest source of revenue. In addition, *ad valorem* property taxes provide an additional limited revenue source, which is used to pay pre-1978 voter-approved indebtedness. However, the use of water rates as a primary source of revenue has placed an increasing burden on member agencies and their ratepayers, which would more equitably continue to be paid in part by assessments on land that in part derives its value from the availability of water through an integrated and reliable water system.

Readiness-To-Serve

In December 1993, Metropolitan's Board approved a revenue structure that included additional charges to establish a commitment to Metropolitan's capital improvement program and provide revenue stability. This revenue structure included the RTS Charge, which in 1995 certain member agencies opted to pay in part pursuant to the collection of a standby charge. In October 2001, the Board adopted the current unbundled rate structure, and maintained the RTS Charge.

As noted above, Metropolitan levies the RTS Charge on its member agencies to recover capital costs, including a portion of the debt service on bonds issued to finance capital facilities needed to meet existing demands on Metropolitan's system for emergency storage and available capacity.

The estimated fiscal year 2020/21 RTS Charge for each member agency is shown in Table 4.

Standby Charge Option

Metropolitan's Standby Charge is authorized by the State Legislature and has been levied by Metropolitan since fiscal year 1992/93. The Standby Charge recognizes that there are economic benefits to lands that have access to a water supply, whether or not such lands are using it, which excludes lands permanently committed to open space and maintained in their natural state that are not now and will not in the future be supplied water and lands that the General Manager, in his discretion, finds do not now and cannot reasonably be expected to derive a benefit from the projects to which the proceeds of the Standby Charge will be applied. Utilization of the Standby Charge transfers some of the burden of maintaining Metropolitan's capital infrastructure from water rates and *ad valorem* taxes to all the benefiting properties within the service area. A fraction of the value of this benefit and of the cost of providing it can be effectively recovered, in part, through the levying of a standby charge. The projects to be supported in part by the Standby Charge are capital projects that provide both local and Metropolitan-wide benefit to current landowners as well as existing water users.

Although a standby charge could have been set to recover all Conveyance, Distribution, and Storage costs as detailed in Table 1, Metropolitan's continued Standby Charge only collects about 15% of those costs. For fiscal year 2020/21, the amount to be recovered by the RTS Charge is estimated to be \$130 million and of that only \$43.8 million is estimated to be recovered by the Standby Charge.

The Standby Charge for each acre or parcel of less than an acre varies from member agency to member agency, as permitted under the legislation establishing Metropolitan's Standby Charge. The water Standby Charge for each member agency is continued at amounts not to exceed the rates in place since fiscal year 1996/97 and is shown in Table 5, which consists of composite rates by member agencies, not to exceed \$15.00. The composite rates consist in part of a uniform component of \$5 applicable throughout Metropolitan, and in part of a variable component, not exceeding \$10 in any member public agency, reflecting the allocation of historical water deliveries by the member agencies as of fiscal year 1993/94 when the composite rates were initially established. Metropolitan will continue Standby Charges only within the service areas of the member agencies that have requested that the Standby Charge be utilized for purposes of meeting their outstanding RTS obligation.

The Standby Charge is proposed to be collected from: (1) parcels on which water standby charges have been levied in fiscal year 1996/97 and annually thereafter and (2) parcels annexed to Metropolitan and to an electing member agency after January 1997. Table 6 lists parcels annexed, or to be annexed, to Metropolitan and to electing member agencies during fiscal year 2018/19, such parcels being subject to the Standby Charge upon annexation.

The estimated costs of Metropolitan's wholesale water system, which could be paid by a Standby Charge, exceed \$284.2 million for fiscal year 2020/21, as shown in Table 1. An average total Standby Charge of about \$66.06 per acre of land or per parcel of land less than one acre would be necessary to pay for the total potential program benefits. Benefits in this amount will accrue to each acre of property and parcel within Metropolitan's service area, as Metropolitan delivers water to member agencies that contributes to water available to these properties, via that member agency or a retail sub-agency. Because Metropolitan's water deliveries to member agencies contributes to water available only to properties located within Metropolitan's service area boundaries (except for certain contractual deliveries as permitted under Section 131 of the Metropolitan Water District Act), any benefit received by the public at large or by properties outside of the area is merely incidental.

Table 5 shows that the distribution of Standby Charge revenues from the various member agency service

areas would provide net revenue flow of approximately \$43.8 million for fiscal year 2020/21. Metropolitan will use other revenue sources, such as water sales revenues, RTS Charge revenues (except to the extent collected through standby charges, as described above), interest income, and revenue from sales of hydroelectric power, to pay for the remaining program costs. Additionally, the actual Standby Charge proposed to be continued ranges from \$5 to \$15 per acre of land or per parcel of land less than one acre. Thus, the benefits of Metropolitan's investments in water conveyance, storage, distribution, and demand management programs far exceed the recommended Standby Charge.

Equity

The RTS Charge is a firm revenue source. The revenues to be collected through this charge will not vary with sales in the current year. This charge is levied on Metropolitan's member agencies and is not a fee or charge upon real property or upon persons as an incident of property ownership. It ensures that agencies that only occasionally purchase water from Metropolitan but receive the reliability benefits of Metropolitan's system pay an equitable share of the costs to provide that reliability. Within member agencies that elect to pay the RTS Charge through Metropolitan's standby charges, the Standby Charge results in a lower RTS Charge than would otherwise be necessary due to the amount of revenue collected from lands which benefit from the availability of Metropolitan's water system. With the Standby Charge, these properties are now contributing a more appropriate share of the cost of importing water to Southern California.

Metropolitan's water system increases the availability and reliable delivery of water throughout Metropolitan's service area. A reliable system benefits existing end users and land uses through retail water service provided by Metropolitan member agencies or by water retailers that purchase water from a Metropolitan member agency, and through the replenishment of groundwater basins and reservoir storage as reserves against shortages due to droughts, natural emergencies, or scheduled facility shutdowns for maintenance. The benefits of reliable water resources from the SWP, CRA, Storage, and system improvements accrue to more than 250 cities and communities within Metropolitan's six-county service area. Metropolitan's regional water system is interconnected, so water supplies from the SWP and CRA can be used throughout most of the service area and therefore benefit water users and properties system-wide.

Additional Metropolitan deliveries required due to the demands of property development will be reduced by the implementation of demand management projects, including water conservation, water recycling, and groundwater recovery projects. As with the SWP, CRA and Storage and the conveyance and distribution facilities, demand management programs increase the future reliability of water resources. In addition, demand management programs provide system-wide benefits by decreasing the demand for imported water, which helps to decrease the burden on the district's infrastructure and reduce system costs, and free up conveyance capacity to the benefit of all system users.

A major advantage of a firm revenue source, such as a RTS charge, is that it contributes to revenue stability during times of drought or low water sales. It affords Metropolitan additional security, when borrowing funds, that a portion of the revenue stream will be unaffected by drought or by rainfall. This security will help maintain Metropolitan's historically high credit rating, which results in lower interest expense to Metropolitan, and therefore, lower overall cost to its member agencies.

SUMMARY

The foregoing and the attached tables describe the current costs of Metropolitan's system and benefits provided by the projects listed as mainstays to the water system for Metropolitan's service area. Benefits are provided to member agencies, their retail sub-agencies, water users and property owners. The

projects represented by this report provide both local benefits as well as benefits throughout the entire service area. It is recommended, for calendar year 2021, that the Metropolitan Board of Directors adopt the RTS Charge as set forth in Table 4 with an option for local agencies to request that a Standby Charge be collected for fiscal year 2020/21 from lands within Metropolitan's service area as a credit against such member agency's RTS Charge, up to the Standby Charge amounts collected by Metropolitan within the applicable member agency for fiscal year 1996/97. The maximum Standby Charge would not exceed \$15 per acre of land or per parcel of less than one acre. The recommended Standby Charge exceeds the costs of the system described in this Engineer's Report by at least \$240 million. A preliminary listing of all parcels subject to the proposed 2020/21 Standby Charge and the amounts proposed to be continued for each is available in the office of the Chief Financial Officer. A final listing is available upon receipt of final information from each county.

Prepared Under the Supervision of:



Brad Coffey, RCE C52169
Group Manager
Water Resource Management

Prepared Under the Supervision of:



Katano Kasaine
Assistant General Manager/
Chief Financial Officer



TABLE 1

**ESTIMATED COSTS OF
WATER SYSTEM INFRASTRUCTURE
BENEFITING REAL PROPERTY WITHIN METROPOLITAN'S SERVICE AREA**

| | Estimated Program Costs for FY2020/21 | Dollars Per Parcel of 1 Acre or Less |
|--|--|---|
| Capital Payments for Water System Infrastructure | | |
| Net Capital Payments to State Water Project (SWP) | | |
| (less portion paid by property taxes) | \$ 41,766,881 | \$9.71 |
| Non Tax Supported Capital Costs for Non-SWP Conveyance System ¹ | \$ 74,568,374 | \$17.34 |
| Non Tax Supported Capital Costs for Distribution System ² | \$ 70,409,322 | \$16.37 |
| Non Tax Supported Capital Costs for Water Storage ³ | \$ 97,417,140 | \$22.65 |
| Total Capital Payments | \$ 284,161,717 | \$66.06 |
| Estimated Standby Charge Revenues | \$ 43,803,133 | \$10.18 |
| Percent Collected by Standby Charge | 15% | |
| Total Remaining Costs Not Paid by Standby Charge | \$ 240,358,584 | \$55.88 |
| Notes: | | |
| [1] Non-SWP Conveyance include the Colorado River Aqueduct and Inland Feeder. | | |
| [2] Distribution facilities include the pipelines, laterals, feeders and canals that distribute water throughout the service area. | | |
| [3] System storage includes Diamond Valley Lake, Lake Mathews, Lake Skinner and several other smaller surface reservoirs which provide storage for operational purposes. | | |
| Totals may not foot due to rounding | | |

TABLE 2

**WATER RECYCLING, GROUNDWATER RECOVERY
AND CONSERVATION PROJECTS**

| Project Name | FISCAL YEAR 2020/21 Payment |
|---|--|
| Water Recycling Projects | \$7,865,397 |
| Alamitos Barrier Reclaimed Water Project | |
| Anaheim Water Recycling Demonstration Project | |
| Burbank Recycled Water System Expansion Phase II Project | |
| Development of Non-Domestic Water System in Ladera Ranch and Talega Valley | |
| Direct Reuse Project Phase IIA | |
| Dry Weather Runoff Reclamation Facility | |
| Eastern Recycled Water Pipeline Reach 16 Project | |
| El Toro Phase II Recycled Water Distribution System Expansion Project | |
| El Toro Recycled Water System Expansion | |
| Elsinore Valley Recycled Water Program | |
| EMWD Recycled Water System Expansion Project | |
| Escondido Regional Reclaimed Water Project | |
| Glendale Verdugo-Scholl and Brand Park Project | |
| Griffith Park South Water Recycling Project | |
| Groundwater Reliability Improvement Program Recycled Water Project | |
| Hansen Area Water Recycling Phase I Project | |
| Hansen Dam Golf Course Water Recycling Project | |
| Harbor Water Recycling Project | |
| Lake Mission Viejo Advanced Purification WTF | |
| Leo J. Vander Lans Water Treatment Facility Expansion Project | |
| Long Beach Reclaimed Water Master Plan Phase I System Expansion | |
| Los Angeles Taylor Yard Park Water Recycling Project | |
| Michelson/Los Alisos Water Reclamation Plant Upgrades and Distribution System Expansion Project | |
| North Atwater Area Water Recycling Project | |
| North City Water Reclamation Project | |
| North Hollywood Area Water Recycling Project | |
| Otay Recycled Water System | |
| Oxnard Advanced Water Purification Facility Project | |

TABLE 2 (Continued)

**WATER RECYCLING, GROUNDWATER RECOVERY
AND CONSERVATION PROJECTS**

| Project Name | FISCAL YEAR 2020/21 Payment |
|--|--|
| Water Recycling Projects (continued) | |
| Padre Dam MWD Reclaimed Water System Phase I | |
| Rowland Water District Portion of the City of Industry Regional Recycled Water Project | |
| San Clemente Recycled Water System Expansion Project | |
| San Elijo Water Reclamation System | |
| Santa Maria Water Reclamation Project | |
| Sepulveda Basin Sports Complex Water Recycling Project | |
| Sepulveda Basin Water Recycling Project - Phase 4 | |
| Terminal Island Recycled Water Expansion Project | |
| USGVMWD Portion of the City of Industry Regional Recycled Water Project | |
| Van Nuys Area Water Recycling Project | |
| Walnut Valley Water District Portion of the City of Industry Regional Recycled Water Project | |
| West Basin Water Recycling Program Phase V Project | |
| Westside Area Water Recycling Project | |

TABLE 2 (Continued)

**WATER RECYCLING, GROUNDWATER RECOVERY
AND CONSERVATION PROJECTS**

| Project Name | FISCAL YEAR 2020/21 Payment |
|--|--|
| Groundwater Recovery Projects | \$9,393,860 |
| Beverly Hills Desalter Project | |
| Cal Poly Pomona Water Treatment Plant | |
| Capistrano Beach Desalter Project | |
| Chino Basin Desalination Program / IEUA | |
| Chino Basin Desalination Program / Western | |
| Colored Water Treatment Facility Project | |
| Irvine Desalter Project | |
| IRWD Wells 21 & 22 Desalter Project | |
| Madrona Desalination Facility (Goldsworthy Desalter) Project | |
| Menifee Basin Desalter Project | |
| Perris II Brackish Groundwater Desalter | |
| Pomona Well #37-Harrison Well Groundwater Treatment Project | |
| Round Mountain Water Treatment Plant | |
| San Juan Basin Desalter Project | |
| Temescal Basin Desalting Facility Project | |
| On-site Retrofit Program | \$2,000,000 |
| Future Supply Actions | \$4,272,500 |
| Conservation Projects | \$25,000,000 |
| Regionwide Residential | |
| Regionwide Commercial | |
| Member Agency Administered/MWD Funded | |
| Water Incentive Savings Program | |
| Landscape Training Classes | |
| Landscape Irrigation Surveys | |
| Pilot programs/Studies | |
| Inspections | |
| Landscape Transformation Program (Turf Removal) | |
| Disadvantaged Communities Program | |
| Total Demand Management Programs | \$48,531,757 |

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Storage Facilities

ALAMEDA CORRIDOR, PIPELINE RELOCATION, PROTECTION
 CAPITAL PROGRAM FOR PROJECTS COSTING LESS THAN \$250,000-LIVE OAK
 CAPITAL PROGRAM FOR PROJECTS COSTING LESS THAN \$250,000-MORRIS DAM
 CHINO BASIN GROUNDWATER SERVICE CONNECTION CB-15T
 CHLORINATION AND PH CONTROL FACILITIES- ORANGE COUNTY & GARVEY (50/50)
 CLEARING OF LAKE MATHEWS RESERVOIR AREA
 CONVERSION OF DEFORMATION SURVEY MONITORING AT COPPER BASIN
 COPPER BASIN AND GENE WASH DAM, INSTALL SEEPAGE ALARM (50/50)
 COPPER BASIN RESERVOIR SUPERVISORY CONTROL
 COPPER BASIN SEWER SYSTEM
 CORONA DEL MAR RESERVOIR- REPLENISHMENT
 CORONA DEL MAR RESERVOIR-: CHLORINATION STATION
 CRANE - LAKE MATHEWS OUTLET TOWER (ORG CONST)
 DAM SEISMIC ASSESSMENT - PHASE 3
 DAM SEISMIC UPGRADES - PHASE 3
 DIAMOND VALLEY LAKE DAM MONITORING SYSTEM UPGRADE
 DIAMOND VALLEY LAKE INLET/OUTLET TOWER FISH SCREEN REPLACEMENT - CONSTRUCTION
 DIAMOND VALLEY LAKE, CAL PLAZA CHARGES
 DIAMOND VALLEY LAKE, CONSULTANT COSTS
 DIAMOND VALLEY LAKE, DAM DEFORMATION MONITORING
 DIAMOND VALLEY LAKE, EAST DAM SUMP PUMP ELECTRICAL STUDY
 DIAMOND VALLEY LAKE, GENERAL CONSTRUCTION MGMT, 2000-2001
 DIAMOND VALLEY LAKE, INUNDATION MAPS
 DIAMOND VALLEY LAKE, UNDERGROUND TANK CLOSURE
 DIAMOND VALLEY RECREATION, EAST MARINA
 DIAMOND VALLEY RECREATION, FISHERY
 DIAMOND VALLEY RECREATION, MUSEUM FOUNDATION REHABILITATION
 DIAMOND VALLEY RECREATION, SEARL PARKWAY IMPROVEMENTS, PHASE I
 DIAMOND VALLEY TRAILS PROGRAM, TRAILS
 DISTRICT DESIGN AND INSPECTION - MORRIS DAM
 DISTRICT RESERV. AQUEOUS AMMONIA FEED SYSTEM
 DISTRICT RESERVOIR - LONGTERM CHEMICAL FAC CONTAINMENT
 DOMESTIC WATER SUPPLY - LAKE MATHEWS (ORG CONST)
 DOMESTIC WATER SYSTEM-PALOS VERDES RESERVOIR (INTERIM CONST)
 DVL - SEARL PARKWAY EXTENSION - PHASE 2
 DVL - SEARL PARKWAY LANDSCAPING
 DVL EAST DAM ELECTRICAL UPGRADES
 DVL EAST DAM POWER LINE REALIGNMENT
 DVL INLET/OUTLET FISH SCREEN REHABILITATION
 DVL RECREATION - ALTERNATE ACCESS ROAD
 DVL RECREATION, COMMUNITY PARK AND REGIONAL AQUATIC FACILITY
 DVL SECURITY ENHANCEMENT
 DVL, CONSTRUCTION
 DVL, CONSTRUCTION CLAIMS SUPPORT
 DVL, CONSTRUCTION MANAGEMENT SERVICE
 DVL, CONSTRUCTION SUPERVISION
 DVL, CONSTRUCTION, WEST DAM FOUNDATION
 DVL, DEDICATION CEREMONY
 DVL, DISTURBED
 DVL, DOMENIGONI PARK
 DVL, EAST DAM
 DVL, EAST DAM EMBANKMENT
 DVL, EAST DAM FENCING
 DVL, EAST DAM INLET OUTLET TOWER CONSTRUCTION
 DVL, EAST DAM LANDSCAPE SCREENING
 DVL, EAST DAM NORTH RIM REMEDIATION
 DVL, EAST DAM P-1 FACILITIES
 DVL, EAST DAM SITE COMPLETION
 DVL, EAST DAM STATE STREET IMPROVEMENTS
 DVL, EAST DAM VERTICAL SLEEVE VALVE
 DVL, EAST MARINA, PHASE 2
 DVL, EXCAVATION
 DVL, FIXED CONE, SPHERE
 DVL, GENERAL
 DVL, GRADING OF CONT
 DVL, INSTALL NEW WATERLINE
 DVL, MISC SMALL CONS
 DVL, NORTH HIGH WATER ROAD
 DVL, P-1 PUMPING FACILITY
 DVL, PROCUREMENT
 DVL, SCOTT ROAD EXTENSION
 DVL, SOUTH HIGH WATER ROAD & QUARRY
 DVL, SPILLWAY
 DVL, START UP
 DVL, VALLEY-WIDE SITE ROUGH GRADING
 DVL, WORK PACKAGE

**TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS**

Description

Storage Facilities

DVL, WORK PACKAGE 1
DVL, WORK PACKAGE 10, INLET OUTLET WORK
DVL, WORK PACKAGE 11, FOREBAY
DVL, WORK PACKAGE 12, TUNNEL
DVL, WORK PACKAGE 13, P-1 PUMP OPERATIONS FACILITY
DVL, WORK PACKAGE 14, PC-1
DVL, WORK PACKAGE 15, SITE CLEARING
DVL, WORK PACKAGE 16, GROUNDWATER MONITORING
DVL, WORK PACKAGE 17, FIELD OFFICE
DVL, WORK PACKAGE 18, TEMPORARY VISITOR CENTER
DVL, WORK PACKAGE 19, PERMANENT VISITOR CENTER
DVL, WORK PACKAGE 2, EASTSIDE PIPELINE
DVL, WORK PACKAGE 20, EAST DAM EXCAVATION, FOUNDATION
DVL, WORK PACKAGE 21, WEST DAM EXCAVATION, FOUNDATION
DVL, WORK PACKAGE 23, WEST RECREATION AREA
DVL, WORK PACKAGE 24, EAST RECREATION AREA
DVL, WORK PACKAGE 25, EXCAVATION
DVL, WORK PACKAGE 26, ELECTRICAL TRANSMISSION LINES
DVL, WORK PACKAGE 27, MAJOR EQUIPMENT P-1
DVL, WORK PACKAGE 28, MAJOR EQUIPMENT, GATES
DVL, WORK PACKAGE 29, MAJOR EQUIPMENT, PC-1
DVL, WORK PACKAGE 30, INSTRUMENTATION AND CONTROL SYSTEMS
DVL, WORK PACKAGE 31, GEOGRAPHICAL INFO
DVL, WORK PACKAGE 32, PERMIT
DVL, WORK PACKAGE 33, MAJOR EQUIPMENT, VALVES
DVL, WORK PACKAGE 34, EMERGENCY RELEASE
DVL, WORK PACKAGE 35
DVL, WORK PACKAGE 36, TRANSMISSION LINE TO PC-1
DVL, WORK PACKAGE 38, RUNOFF EROSION
DVL, WORK PACKAGE 39, SADDLE DAM FOUNDATION
DVL, WORK PACKAGE 4, NEWPORT ROAD RELOCATION
DVL, WORK PACKAGE 40
DVL, WORK PACKAGE 42, GEOTECHNICAL
DVL, WORK PACKAGE 43, MOBILIZATION
DVL, WORK PACKAGE 44, SITE DEVELOPMENT
DVL, WORK PACKAGE 47, HAZARDOUS MATERIAL
DVL, WORK PACKAGE 48, GENERAL ADMIN
DVL, WORK PACKAGE 49
DVL, WORK PACKAGE 5, SALT CREEK FLOOD CONTROL
DVL, WORK PACKAGE 52, HISTORY ARCHEOLOGY INVENTORY
DVL, WORK PACKAGE 53, PREHISTORIC ARCHEOLOGY
DVL, WORK PACKAGE 54, PLANTS, WILDLIFE
DVL, WORK PACKAGE 55, AIR QUALITY, NOISE
DVL, WORK PACKAGE 6, SURFACE WATER MITIGATION
DVL, WORK PACKAGE 7, DESIGN WEST DAM ACCESS
DVL, WORK PACKAGE 8, DESIGN EAST DAM ACCESS
DVL, WORK PACKAGE 9, SADDLE DAM
DVL, WORKING INVENTORY, 80,000 ACRE FEET (10% OF CAPACITY)
EAST DAM TUNNELS
EAST MARINA BOAT RAMP EXTENSION
ELECTRICAL SERVICE - LAKE MATHEWS (ORG CONST)
ELECTRICAL SYSTEM - LAKE MATHEWS (ORG CONST)
FIRST SAN DIEGO AQUEDUCT - REPLACE PIPELINE SECTION BOTH BARRELS
FLOATING BOAT HOUSE - LAKE MATHEW
FLOOD RELEASE VALVE, MORRIS DAM & WATER SUPPLY SYSTEM,PV RESER.
FOOTBRIDGE - LAKE MATHEWS (ORG CONST)
FOOTHILL FEEDER- LIVE OAK RESERVOIR- CLAIMS
FOOTHILL FEEDER- LIVE OAK RESERVOIR- RESIDENCE
GARVEY RESERVOR OPERATION & MAINTENANCE CENTER
GARVEY RESERVOR OPERATION & MAINTENANCE CENTER (RETIREMENT)
GARVEY RESERVOIR - JUNCTION STRUCTURE,REPLACE VALVE # 1
GARVEY RESERVOIR COVER AND LINER REPLACEMENT PROJECT
GARVEY RESERVOIR DRAINAGE & EROSION CONTROL IMPROVEMENTS
GARVEY RESERVOIR- EMERGENCY GENERATOR
GARVEY RESERVOIR- FLOATING COVER
GARVEY RESERVOIR HYPOCHLORITE FEED SYSTEM
GARVEY RESERVOIR- JUNCTION STRUCTURE, REPLACE VALVE #1
GARVEY RESERVOIR- JUNCTION STRUCTURE, REPLACE VALVE #1 - INTEREST
GARVEY RESERVOIR- JUNCTION STRUCTURE, REPLACE VALVES # 4 & 5
GARVEY RESERVOIR- MODIFY DESILTING BASINS
GARVEY RESERVOIR REPAIR
GARVEY RESERVOIR, LOWER ACCESS ROAD, PAVING & DRAINS
GARVEY RESERVOIR, REPLACE VALVE # 4 & 5
GARVEY RESERVOIR, TWO VALVES AT JUNCTION STRUCTURE
GARVEY RESERVOIR: CONT. 565, SPEC.412
GARVEY RESERVOIR: TWO COTTAGES WITH GARAGES

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Storage Facilities

GARVEY RESERVOIR-HYPOCHLORINATION
 GARVEY RESERVOIR-HYPOCHLORINE STATION
 GARVEY RESERVOIR-INLET AND OUTLET CONDUIT SYSTEM MODIFICATION
 GARVEY RESEVOIR-JUNCTION STRUCTURE REPLACE TWO VALVES
 GARVEY RSVR REPLACE VENTURI THROAT SECTION
 HEADWORKS OF DISTRIBUTION SYSTEM LAKE MATHEWS
 HEADWORKS: ADDITIONAL VALVES
 HEADWORKS: MOTOR OPERATED SLIDE GATES
 HOUSE AND GARAGE AT CORONA DEL MAR RESERVOIR
 HOUSE AND GARAGE AT ORANGE COUNTY RESERVOIR
 HOUSE AT PALOS VERDES RESERVOIR
 HOWELL-BUNGER VALVE OPERATOR, LAKE MATHEWS, 5 VALVES 1939
 HOWELL-BUNGER VALVE OPERATOR, LAKE MATHEWS, 5 VALVES 1955
 JENSEN FINISHED WATER RESERVOIR NO. 1 COVER REHABILITATION
 JENSEN FINISHED WATER RESERVOIR NO. 2 FLOATING COVER IMPROVEMENT
 JENSEN FWR # 2 FLOATING COVER REPLACEMENT
 JENSEN, REPAIR COVER OVER RESERVOIR 1
 LAKE MATHEWS - REPLACE STANDBY GENERATOR
 LAKE MATHEWS - ELECTRICAL SYSTEM IMPROVEMENT
 LAKE MATHEWS ABOVEGROUND STORAGE TANK REPLACEMENT
 LAKE MATHEWS BUILDING
 LAKE MATHEWS BUILDINGS 8 & 15, RENOVATION OF ASSEMBLY AREA AND ADMIN. BLDG.
 LAKE MATHEWS- CARPENTER AND VEHICLE MAINTENANCE BUILDING
 LAKE MATHEWS- CHLORINATION FACILITIES
 LAKE MATHEWS CHLORINATION FACILITY- REPLACE CHLORINATION EQPMT.
 LAKE MATHEWS CNTRL TOWER-REPL. 45 30-INCH GATE/BUTTERFLY VALVES
 LAKE MATHEWS CONTROL TOWER - REPLACE 45 10-INCH GATE VALVE
 LAKE MATHEWS DAM SAFETY INSTRUMENTATION UPGRADES
 LAKE MATHEWS DAM SPILLWAY ASSESSMENT
 LAKE MATHEWS DIKE
 LAKE MATHEWS DISCHARGE FACILITY UPGRADES
 LAKE MATHEWS DIVERSION TUNNEL
 LAKE MATHEWS DIVERSION TUNNEL WALKWAY REPAIR
 LAKE MATHEWS- DOCK AND BOAT SHELTER
 LAKE MATHEWS DOMESTIC FACILITIES
 LAKE MATHEWS- DOMESTIC WATER SYSTEM
 LAKE MATHEWS ELECTRICAL RELIABILITY
 LAKE MATHEWS- ELECTRICAL SYSTEM IMPROVEMENT
 LAKE MATHEWS- EMERGENCY GENERATOR
 LAKE MATHEWS ENLARGEMENT (SPEC NO. 505)
 LAKE MATHEWS FOREBAY LINING AND TOWER REPAIRS
 LAKE MATHEWS FOREBAY OUTLET STRCTR-REPL.CONCRETE BLOCK BLDG
 LAKE MATHEWS FOREBAY OUTLET, CONCRETE BLDG
 LAKE MATHEWS FOREBAY- REPLACE FOOTBRIDGE
 LAKE MATHEWS FOREBAY WALKWAY REPAIRS
 LAKE MATHEWS FOREBAY, HEADWORK FACILITY AND EQUIPMENT UPGRADE
 LAKE MATHEWS HEADWORKS-INSTALL AIR MTRS,3 HOWELL BNGR VALVE OP.
 LAKE MATHEWS- HOUSE AND GARAGE
 LAKE MATHEWS I/O TOWER EMERGENCY GENERATOR
 LAKE MATHEWS- IMPROVE MAIN SUBSTATION
 LAKE MATHEWS- IMPROVEMENT OF DOMESTIC WATER & FIRE PROT. SYSTEM
 LAKE MATHEWS -LUMBER STORAGE BUILDING
 LAKE MATHEWS -LUMBER STORAGE BUILDING - INTEREST
 LAKE MATHEWS LUMBER STORAGE ROOF COVER
 LAKE MATHEWS MAIN DAM AND SPILLWAY
 LAKE MATHEWS MAIN DAM SUB DRAIN SYSTEM
 LAKE MATHEWS MAINTENANCE BUILDING
 LAKE MATHEWS MAINTN.FACILITIES-REPLACE 75 KVA TRANSFORMER.SERV.
 LAKE MATHEWS- MODIFY CHLORINATION
 LAKE MATHEWS- MODIFY CHLORINE STORAGE TANK FOUNDATIONS
 LAKE MATHEWS- MODIFY ELECTRICAL SERVICE
 LAKE MATHEWS MULTIPLE SPECIES RESERVE, MANAGER'S OFFICE AND RESIDENCE
 LAKE MATHEWS OFFICE BLDG MODIFICATIONS-AMERICANS W/ DISABILITY
 LAKE MATHEWS OFFICE TRAILER MODIFICATIONS-AMERICANS W/ DISABILITY
 LAKE MATHEWS -OPERATOR RESIDENCE
 LAKE MATHEWS OULET TOWER
 LAKE MATHEWS OUTLET FACILITIES
 LAKE MATHEWS OUTLET TOWER NO. 2 VALVE REHABILITATION
 LAKE MATHEWS OUTLET TOWER- REPLACE CRANES
 LAKE MATHEWS OUTLET TOWER-REPLACE GATE VALVES
 LAKE MATHEWS OUTLET TOWER-REPLACE GATE VALVES (RETIREMENT)
 LAKE MATHEWS OUTLET TUNNEL
 LAKE MATHEWS- PREFABRICATED AIRCRAFT HANGER
 LAKE MATHEWS- PREFABRICATED AIRCRAFT HANGER - INTEREST
 LAKE MATHEWS- PROPANE STORAGE TANK
 LAKE MATHEWS- PROPANE STORAGE TANK - INTEREST

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Storage Facilities

LAKE MATHEWS- REPLACE HOWELL-BUNGER VALVE OPERATORS
 LAKE MATHEWS- REPLACE VALVES
 LAKE MATHEWS RESERVOIR-RELOCATE SOUTHERLY SECURITY FENCE
 LAKE MATHEWS RESERVOIR-RELOCATE SOUTHERLY SECURITY FENCE - INTEREST
 LAKE MATHEWS- SEEPAGE ALARMS
 LAKE MATHEWS- SEEPAGE ALARMS - INTEREST
 LAKE MATHEWS SODIUM HYPOCHLORITE TANK REPLACEMENT
 LAKE MATHEWS SODIUM HYPOCHLORITE INJECTION SYSTEM
 LAKE MATHEWS- SPRAY PAINT BOOTH
 LAKE MATHEWS WASTEWATER SYSTEM REPLACEMENT
 LAKE MATHEWS WATERSHED, DRAINAGE
 LAKE MATHEWS WATERSHED, DRAINAGE WATER QUALITY MGMT PLAN (CAJALCO CREEK DAM)
 LAKE MATHEWS, HAZEL ROAD
 LAKE MATHEWS, REPLACE CHLORINATION EQUIPMENT
 LAKE MATHEWS,DIKE #1- INSTALL PIEZOMETERS, STAS.55+00 & 85+50
 LAKE MATHEWS: VALVES AND FITTINGS IN HEADWORKS
 LAKE MATHEWS-CONST. CONCR.TRAFFIC BARR. WALL TO PROTECT HQ FACIL.
 LAKE MATTHEWS FIRE WATER LINE
 LAKE PERRIS POLLUTION PREVENTION AND SOURCE WATER PROTECTION (CAPITAL PORTION)
 LAKE SKINNER - AERATION SYSTEM
 LAKE SKINNER - CHLORINATION SYSTEM OUTLET TOWER BYPASS PPLN
 LAKE SKINNER - CHLORINATION SYSTEM OUTLET TOWER BYPASS PPLN - INTEREST
 LAKE SKINNER - INSTALL OUTLET CONDUIT FLOWMETER
 LAKE SKINNER (AULD VALLEY RESERVOIR)- CLAIMS
 LAKE SKINNER AERATOR AIR COMPRESSORS REPLACEMENT
 LAKE SKINNER- EQUIPMENT YARD SECURITY
 LAKE SKINNER- EQUIPMENT YARD SECURITY - INTEREST
 LAKE SKINNER FACILITIES
 LAKE SKINNER FACILITIES - EMPLOYEE HOUSING
 LAKE SKINNER FACILITIES - FENCING
 LAKE SKINNER FACILITIES - LANDSCAPING
 LAKE SKINNER FACILITIES - RELOCATE BENTON ROAD
 LAKE SKINNER OUTLET CONDUIT REPAIR
 LAKE SKINNER OUTLET TOWER SEISMIC ASSESSMENT
 LAKE SKINNER- PROPANE STORAGE TANK
 LAKE SKINNER- PROPANE STORAGE TANK - INTEREST
 LIVE OAK RESERVOIR & RESERVOIR BYPASS SCHEDULE 264A
 LIVE OAK RESERVOIR REHABILITATION
 LIVE OAK RESERVOIR SURFACE REPAIR
 MAINTENANCE FACILITIES, 75KVA TRANSFORMER SERVICE-LAKE MATHEWS (ORG CONST)
 MILLS FINISHED WATER RESERVOIR REHABILITATION
 MINOR CAPITAL PROJECTS FOR FY 1989/90 - LAKE MATHEWS
 MINOR CAPITAL PROJECTS FOR FY 1989/90 - PALOS VERDES RESERVOIR
 MINOR CAPITAL PROJECTS-LAKE SKINNER, INLET CANAL ELECTRIC FISH BARRIER
 MINOR CAPITAL PROJECTS-LIVE OAK RESERVOIR, DESILT BASIN IMPROVEMENTS
 MODIFICATION OF THE LAKE MATHEWS SERVICE WATER SYSTEM
 MORRIS DAM COTTAGE
 MORRIS DAM- ENLARGMT. OF SPILLWAY FACLT.& UPPER FDR.VALVE MODF
 MORRIS DAM ROAD IMPROVEMENT
 MORRIS DAM, SEISMIC STABILITY REANALYSIS
 MORRIS DAM-REPLACE EMERENGY POWER SYSTEM
 MORRIS RESERVOIR- CAPITAL OBLIGATION PAID
 MORRIS RESERVOIR- INTEREST OBLIGATION PAID
 O.C.RESERVOIR - IMPROVE DOMESTIC SYSTEM
 ORANGE COUNTY RESERVOIR -- JUNCTION STRUCTURE,REPLACE VALVE # 1
 ORANGE COUNTY RESERVOIR (SPEC NO. 341)
 ORANGE COUNTY RESERVOIR CHLORINATION STATION
 ORANGE COUNTY RESERVOIR- EMBANKMENT AND SPILLWAY
 ORANGE COUNTY RESERVOIR- EMERGENCY GENERATOR
 ORANGE COUNTY RESERVOIR- FLOATING COVER
 ORANGE COUNTY RESERVOIR- HOUSE
 ORANGE COUNTY RESERVOIR- MODIFY DOMESTIC WATER SYSTEM
 ORANGE COUNTY RESERVOIR- REPLACE RESIDENCE NO. 95D
 ORANGE COUNTY RESERVOIR-MODIFY ELEC. CONTROL CENTER
 ORANGE COUNTY RESERVOIR-REPLACE CHLORINATION EQUIPMENT
 ORANGE COUNTY RESERVOIR-REPLACE CHLORINATION SYSTEM
 P V RESERVOIR-REPLACE CHLORINATION SYSTEM
 PALOS VERDES CHLORINATION STATION AND COTTAGE
 PALOS VERDES RESERVOIR
 PALOS VERDES RESERVOIR - INLET/OUTLET TOWER
 PALOS VERDES RESERVOIR- BY PASS PIPELINES
 PALOS VERDES RESERVOIR COVER REPLACEMENT
 PALOS VERDES RESERVOIR- FENCING AROUND
 PALOS VERDES RESERVOIR- REPLACE DOMESTIC WATER SYSTEM PIPING
 PALOS VERDES RESERVOIR SODIUM HYPOCHLORITE FEED SYSTEM UPGRADE
 PALOS VERDES RESERVOIR,BYPASS PIPELINE RELIEF STRUCTURE MODIFN.

**TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS**

Description

Storage Facilities

PALOS VERDES RESERVOIR,COVERING
 PALOS VERDES RESERVOIR,REPLACE ACCESS AND PERIMETER ROADS
 PALOS VERDES RESERVOIR: INCREASING ELEVATION OF SPILLWAY CREST
 PALOS VERDES RESERVOIR-INSTALL VALVE & CHLORINATION NOZZLE,INL.TWR
 PALOS VERDES RESERVOIR-REPLACE CHLORINATION SYSTEM
 PAMO RESERVOIR- WATER STORAGE FEASIBILITY STUDY
 PAMO RESERVOIR- WATER STORAGE FEASIBILITY STUDY- INTEREST
 PV RESERVOIR GROUNDWATER MANAGEMENT
 RECORD DRAWING RESTORATION PROGRAM, CRA
 REPAIRS TO AZUSA CONDUIT
 REPLACEMENT OF A 30 INCH GATE VALVE P.V.R.
 RESIDENCE # 95-D, ORANGE COUNTY RESERVOIR
 RESIDENCE 45-D - CORONA DEL MAR RESERVOIR
 RESIDENCE 80-D - ORANGE COUNTY RESERVOIR
 RESIDENCE 90-D - LAKE MATHEW
 RESIDENCE 91-D - SAN JACINTO RESERVOIR
 RESIDENCE 93-D - SAN JACINTO RESERVOIR
 ROADS AT LAKE MATHEWS ABOVE FLOODLINE
 SAN DIEGO AQUEDUCT: COTTAGE AT SAN JACINTO RESERVOIR
 SAN JACINTO RESERVOIR - SAN DIEGO AQUEDUCT
 SECOND OUTLET, PALOS VERDES RESERVOIR (SPEC NO. 597)
 SEEPAGE CONTROL AT LAKE MATHEWS
 SKINNER DAM SAFETY INSTRUMENTATION UPGRADES
 SKINNER DAM SPILLWAY ASSESSMENT
 TEMPORARY EMPLOYEE LABOR SETTLEMENT
 VALVE - GENE RESERVOIR (REPLACED 201)
 VALVE STRUCTURE MODIFICATIONS-UPPER FDR, SAN GABRIEL CROSSING (INTERIM CONST)
 WADSWORTH PUMP PLANT CONDUIT PROTECTION
 WADSWORTH PUMP PLANT, PUMP MOTOR CONVERSION
 WADSWORTH/DVL CONTROL & PROTECTION SYSTEM UPGRADE - CONSTRUCTION & STARTUP
 WATER QUALITY PROJECT UPSTREAM
 WATER SUPPLY SYSTEM, OPERATING TOWER, LAKE MATHEWS
 WEYMOUTH FINISHED WATER RESERVOIR GATE REPLACEMENT

Sub-total Storage facilities costs

97,417,140

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Conveyance and Aqueduct Facilities

2.4 KV STANBY DIESEL ENGINE GENERATOR REPLACEMENT - GENE
 2.4 KV STANBY DIESEL ENGINE GENERATOR REPLACEMENT - INTAKE
 2.4 KV STANBY DIESEL ENGINE GENERATOR REPLACEMENT - IRON
 ACCESS STRUCTURE, TRANSITION STRUCTURE AND MANHOLE COVER REPLACEMENT
 ALL PUMPING PLANTS - 230 KV & 69 KV DISCONNECTS REPLACEMENT
 ALL PUMPING PLANTS - BRIDGE CRANES
 ALL PUMPING PLANTS - TRANSFORMER BANK BRIDGE
 ALLEN MCCOLLOCH PIPELINE - CORROSION INTERFERENCE MITIGATION
 ALLEN MCCOLLOCH PIPELINE - RIGHT OF WAY
 ALLEN MCCOLLOCH PIPELINE - UPDATE / MODIFY ALL BOYLE ENGINEERING DRAWINGS
 AMP VALVE & SERVICE CONNECTION VAULT REPAIR
 AQUEDUCT & PUMPING PLANT ISOLATION / ACCESS FIXTURES - STUDY
 AQUEDUCT & PUMPING PLANT ISOLATION GATES
 ARROWHEAD EAST TUNNEL CONSTRUCTION
 ARROWHEAD TDS REDUCTION
 ARROWHEAD TUNNELS CLAIMS COST
 ARROWHEAD TUNNELS CONNECTOR ROAD
 ARROWHEAD TUNNELS CONSTRUCTION
 ARROWHEAD TUNNELS ENGINEERING
 ARROWHEAD TUNNELS RE-DESIGN
 ARROWHEAD WEST TUNNEL CONSTRUCTION
 AULD VALLEY CONTROL STRUCTURE AREA FACILITIES UPGRADE STUDY
 AUXILIARY POWER SYSTEM REHABILITATION / UPGRADES STUDY
 AUXILIARY POWER SYSTEM REHABILITATION/UPGRADES
 BACHELOR MOUNTAIN COMMUNICATION SITE ACQUISITION
 BACHELOR MOUNTAIN TELECOM SITE IMPROVEMENTS
 BANK TRANSFORMERS REPLACEMENT STUDY
 BLACK METAL MOUNTAIN - COMMUNICATIONS FACILITY UPGRADE
 BOX SPRINGS FEEDER REHAB PHASE III
 BUDGET ADJUSTMENT
 CABAZON RADIAL GATE FACILITY IMPROVEMENTS
 CAJALCO CREEK MITIGATION FLOWS
 CAST-IRON BLOW OFF REPLACEMENT - PHASE 4
 CATHODIC PROTECTION STUDY - DESIGN AND CONSTRUCTION
 CCRP - BLOW-OFF VALVES PHASE 4 PROJECT
 CCRP - CONTINGENCY
 CCRP - EMERGENCY REPAIR
 CCRP - HEADGATE OPERATORS & CIRCUIT BREAKERS REHAB.
 CCRP - PART 1 & 2
 CCRP - SAND TRAP CLEANING EQUIPMENT & TRAVELING CRANE STUDY
 CCRP - TRANSITION & MAN-WAY ACCESS COVER REPLACEMENT - STUDY & DESIGN
 CCRP - TUNNELS STUDY
 CEPSRP - 230 KV SYSTEM SYNCHRONIZERS
 CEPSRP - ALL PUMPING PLANTS - CONTINGENCY & OTHER CREDITS
 CEPSRP - ALL PUMPING PLANTS - REPLACE 6.9 KV TRANSFORMER BUSHINGS
 CEPSRP - ALL PUMPING PLANTS - REPLACE 230KV , 69 KV & 6.9 KV LIGHTENING ARRESTERS
 CEPSRP - ALL PUMPING PLANTS - REPLACE 230KV TRANSFORMER PROTECTION
 CEPSRP - SWITCHYARDS & HEAD GATES REHABILITATION
 CEPSRP- ALL PUMPING PLANTS - IRON MOUNTAIN - 230KV BREAKER SWITCH. INST.
 COLORADO RIVER AQUEDUCT - PUMPING
 COLORADO RIVER AQUEDUCT - SIPHONS AND RESERVOIR OUTLETS REFURBISHMENT
 COLORADO RIVER AQUEDUCT CONVEYANCE RELIABILITY, PHASE II REPAIRS AND INSTRUMENTATION
 CONTROL SYSTEM DRAWING UPGRADE STUDY (PHASE 1) - STUDY
 COPPER BASIN AND GENE DAM OUTLET WORKS REHABILITATION (STUDY & DESIGN)
 COPPER BASIN AND GENE WASH RESERVOIRS DISCHARGE VALVE REHABILITATION
 COPPER BASIN INTERIM CHLORINATION SYSTEM
 COPPER BASIN OUTLET GATES RELIABILITY
 COPPER BASIN OUTLET REHABILITATION
 COPPER BASIN OUTLET, AND COPPER BASIN & GENE WASH DAM SLUICWAYS REHABILITATION
 COPPER BASIN POWER & PHONE LINES REPLACEMENT
 COPPER BASIN RESERVOIR OUTLET STRUCTURE REHABILITATION PROJECT
 COPPER SULFATE STORAGE AT LAKE SKINNER AND LAKE MATHEWS
 CORROSION CONTROL OZONE MATERIAL TEST FACILITY
 COST OF LAND AND RIGHT OF WAY
 CRA - ACCESS STRUCTURE, TRANSITION STRUCTURE AND MANHOLE COVER REPLACEMENT
 CRA - AQUEDUCT AND PUMPING PLANT ISOLATION GATES
 CRA - AQUEDUCT RESERVOIR AND DISCHARGE LINE ISOLATION GATES
 CRA - AUXILIARY POWER SYSTEM REHAB
 CRA - BANK TRANSFORMERS REPLACEMENT STUDY
 CRA - BLOW-OFF VALVES PHASE 4
 CRA - CIRCULATING WATER SYSTEM STRAINER REPLACEMENT
 CRA - CONTROL SYSTEM IMPLEMENTATION PHASE CLOSE OUT
 CRA - CONVEYANCE RELIABILITY PROGRAM PART 1 & PART 2
 CRA - COPPER BASIN OUTLET, AND COPPER BASIN & GENE WASH SLUICWAYS REHABILITATION
 CRA - COPPER BASIN POWER & PHONE LINES REPLACEMENT
 CRA - CUT & COVER FORNAT WASH EXPOSURE STUDY

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Conveyance and Aqueduct Facilities

CRA - DANBYTOWER FOOTER REPLACEMENT
 CRA - DELIVERY LINE NO. 1 SUPPORTS REHAB - FIVE PUMPING PLANTS
 CRA - DELIVERY LINES 2&3 SUPPORTS REHAB - GENE & INTAKE
 CRA - DELIVERY LINES 2&3 SUPPORTS REHAB - IRON, EAGLE, & HINDS
 CRA - DESERT PUMP PLANT OIL CONTAINMENT
 CRA - DESERT SEWER SYSTEM REHABILITATION PROJECT
 CRA - DESERT WATER TANK ACCESS & SAFETY IMPROVEMENTS
 CRA - DISCHARGE CONTAINMENT PROGRAM - INVESTIGATION
 CRA - DISCHARGE LINE ISOLATION GATES
 CRA - DWCV-4 VALVE REPLACEMENT
 CRA - EAGLE MOUNTAIN SAND TRAPS INFLOW STUDY
 CRA - ELECTRICAL/ POWER SYST REL. PROG. - IRON MTN - 230KV BREAKER SWITC. INST.
 CRA - GENE PUMPING PLANT MAIN TRANSFORMER AREA
 CRA - HINDS PUMP UNIT NO. 8 REFURBISHMENT
 CRA - INTAKE PUMPING PLANT - COOLING AND REJECT WATER DISCHARGE TO LAKE HAVASU
 CRA - INTAKE PUMPING PLANT AUTOMATION PROGRAMMING
 CRA - INVESTIGATION OF SIPHONS AND RESERVOIR OUTLETS
 CRA - IRON MOUNTAIN RESERVOIR AND CANAL LINER REPAIRS
 CRA - IRON MTN. TUNNEL REHABILITATION
 CRA - LAKEVIEW SIPHON FIRST BARREL - REPAIR DETERIORATED JOINTS
 CRA - MAIN PUMP MOTOR EXCITERS
 CRA - MAIN PUMP STUDY
 CRA - MOUNTAIN SIPHONS SEISMIC VULNERABILITY STUDY
 CRA - PUMPING PLANT RELIABILITY PROGRAM CONTINGENCY
 CRA - PUMPING PLANTS VULNERABILITY ASSESSMENT
 CRA - PUMPING WELL CONVERSION
 CRA - QUAGGA MUSSEL BARRIERS
 CRA - REAL PROPERTY - BOUNDARY SURVEYS
 CRA - RELIABILITY PROGRAM 230 KV & 69 KV DISCONNECTS REPLACEMENT STUDY (5 PLANTS)
 CRA - RELIABILITY PROGRAM INVESTIGATION
 CRA - RELIABILITY PROGRAM PHASE 6 (AQUEDUCT PHASE 6 REHAB.) - SPEC 1568
 CRA - RELIABILITY PHASE II CONTINGENCY
 CRA - SAND TRAP CLEANING EQUIPMENT AND TRAVELING CRANE
 CRA - SERVICE CONNECTION DWCV-2T VALVES REPLACEMENT AND STRUCTURE CONSTRUCTION
 CRA - SERVICE CONNECTION DWCV-4 A, B, C, & D PLUG VALVES REPLACEMENT
 CRA - SIPHONS, TRANSITIONS, CANALS, AND TUNNELS REHABILITATION AND IMPROVEMENTS
 CRA - SUCTION & DISCHARGE LINES EXPANSION JOINT REHAB
 CRA - SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA) SYSTEM
 CRA - SWITCHYARDS AND HEAD GATES REHAB
 CRA - SWITCHYARDS AND HEAD GATES REHABILITATION
 CRA - TRANSFORMER OIL & CHEMICAL UNLOADING PAD CONTAINMENT
 CRA - TUNNELS VULNERABILITY STUDY - REPAIRS TO TUNNELS
 CRA - WEST PORTAL UPGRADE - REHAB OF STILLING WELL, SLIDE GATE OPERATORS AND RADIAL GATES
 CRA 2.4 KV STANDBY DIESEL ENGINE GENERATORS REPLACEMENT
 CRA 230 KV & 69 KV DISCONNECTS SWITCH REPLACEMENT
 CRA 230 KV SYSTEM INTER-AGENCY OPERABILITY UPGRADES
 CRA 230 KV TRANSMISSION SYSTEM REGULATORY AND OPERATIONAL FLEXIBILITY UPGRADES
 CRA 230KV & 69KV PROTECTION PANEL UPGRADE
 CRA 6.9 KV LEAD JACKETED CABLES
 CRA 6.9 KV POWER CABLES REPLACEMENT
 CRA 69KV PANEL UPGRADE
 CRA ACCESS STRUCTURE, TRANSITION STRUCTURE AND MANHOLE COVERS REPLACEMENT
 CRA ALL PUMPING PLANTS - FLOW METER UPGRADES
 CRA AQUEDUCT BLOCKER GATE REPLACEMENT
 CRA AQUEDUCT ISOLATION GATES REPLACEMENT
 CRA BLACK METAL COMMUNICATION SITE II UPGRADE
 CRA CANAL CRACK REHAB AND EVALUATION
 CRA CANAL CRACK REHABILITATION
 CRA CANAL IMPROVEMENTS
 CRA CIRCULATING WATER SYSTEM STRAINER REPLACEMENT
 CRA CONDUIT FORMAT WASH EROSION REPAIRS
 CRA CONDUIT STRUCTURAL PROTECTION
 CRA CONVEYANCE RELIABILITY PROGRAM (CCRP) - BLOW-OFF REPAIR
 CRA CONVEYANCE RELIABILITY PROGRAM PART 1 & PART 2
 CRA COPPER BASIN AND GENE WASH DAM SLUICWAYS
 CRA COPPER BASIN OUTLET GATES RELIABILITY STUDY
 CRA DELIVERY LINE REHABILITATION
 CRA DESERT AIRFIELDS IMPROVEMENT
 CRA DESERT REGION SECURITY IMPROVEMENTS
 CRA DISCHARGE CONTAINMENT PROGRAM - CONTINGENCY
 CRA DISCHARGE CONTAINMENT PROGRAM - GENE & IRON DRAIN SYSTEMS
 CRA DISCHARGE CONTAINMENT PROGRAM - INVESTIGATION
 CRA DISCHARGE CONTAINMENT PROGRAM - OIL & CHEMICAL UNLOADING PAD CONTAINMENT
 CRA ELECTRICAL / POWER SYSTEM RELIABILITY PROGRAM (CEPSRP)
 CRA ENERGY EFFICIENCY IMPROVEMENTS
 CRA GENE PUMPING PLANT HEAVY EQUIPMENT SERVICE PIT

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Conveyance and Aqueduct Facilities

CRA GENE STORAGE WAREHOUSE REPLACEMENT
 CRA HINDS PUMPING PLANT - WASH AREA UPGRADE
 CRA INTAKE PPLANT - POWER & COMMUNICATION LINE REPLACEMENT
 CRA IRON GARAGE HEAVY EQUIPMENT SERVICE PIT REPLACEMENT
 CRA IRON HOUSING REPLACEMENT
 CRA IRON MOUNTAIN SUCTION JOINT REFURBISHMENT PILOT
 CRA MAIN PUMP & MOTOR REFURISHMENT
 CRA MAIN PUMP AND MOTOR REFURISHMENT
 CRA MAIN PUMP CONTROLS & INSTRUMENTATION
 CRA MAIN PUMP DISCHARGE VALVE REFURBISHMENT
 CRA MAIN PUMP MOTOR EXCITERS ASSESSMENT
 CRA MAIN PUMP MOTOR EXCITERS REHABILITATION
 CRA MAIN PUMP STUDY
 CRA MAIN PUMP SUCTION AND DISCHARGE LINES, EXPANSION JOINT REPAIRS
 CRA MAIN PUMPING PLANT DISCHARGE LINE ISOLATION BULKHEAD COUPLING CONSTRUCTION
 CRA MAIN PUMPING PLANT UNIT COOLERS & HEAT EXCHANGERS
 CRA MAIN PUMPING PLANTS DISCHARGE LINE ISOLATION BULKHEAD COUPLINGS
 CRA MAIN PUMPING PLANTS LUBRICATION SYSTEM
 CRA MAIN PUMPING PLANTS SERVICE WATER & SAND REMOVAL SYSTEM
 CRA MAIN TRANSFORMER REPLACEMENT /REHABILITATION
 CRA MAIN TRANSFORMER REPLACEMENT/REHAB.
 CRA MILE 12 POWER LINE & FLOW MONITORING EQUIP. STUDY
 CRA OVER-CURRENT RELAY REPLACEMENT
 CRA PROTECTIVE SLABS
 CRA PUMP PLANT FLOW METER REPLACEMENT
 CRA PUMP PLANT FLOW METER UPGRADE
 CRA PUMP PLANT SUMP PIPING REPLACEMENT STUDY
 CRA PUMP PLANT SUMP SYSTEM REHABILITATION
 CRA PUMP PLANT UNINTERRUPTABLE POWER STUDY (UPS) UPGRADE
 CRA PUMP PLANTS 2.3KV AND 480V SWITCH RACK REHABILITATION
 CRA PUMP PLANTS 2300KV & 480 V SWITCHRACK REHAB
 CRA PUMP WELLS CONVERSION AND BLOW-OFF REPAIR
 CRA PUMPING PLANT DELIVERY LINE REHABILITATION
 CRA PUMPING PLANT REHABILITATION STUDY
 CRA PUMPING PLANT REHABILITATION STUDY AND INVESTIGATION
 CRA PUMPING PLANT RELIABILITY PROGRAM - HIGH PRESSURE COMPRESSOR REPLACEMENT
 CRA PUMPING PLANT RELIABILITY PROGRAM - SUCTION & DISCHARGE LINES EXPANSION JOINT STUDY
 CRA PUMPING PLANT RELIABILITY PROGRAM - SUCTION AND DISCHARGE LINES-EXPANSION JOINT REPAIRS
 CRA PUMPING PLANT STORAGE BUILDINGS AT HINDS, EAGLE MOUNTAIN AND IRON MOUNTAIN
 CRA PUMPING PLANT SUMP SYSTEM REHABILITATION
 CRA PUMPING PLANT WASTEWATER SYSTEM - GENE & IRON MTN.
 CRA PUMPING PLANT WASTEWATER SYSTEM - INTAKE
 CRA PUMPING PLANT WASTEWATER SYSTEM REPLACEMENT - HINDS & EAGLE MTN.
 CRA PUMPING PLANTS - AUXILIARY POWER SYSTEM REHABILITATE/UPGRADES
 CRA PUMPING PLANTS 230KV & 69K DISCONNECT SWITCH REPLACEMENT
 CRA PUMPING PLANTS ASPHALT REPLACEMENT
 CRA PUMPING PLANTS CRANE IMPROVEMENTS
 CRA PUMPING PLANTS SWITCH HOUSE FAULT CURRENT PROTECTION
 CRA PUMPING PLANTS VULNERABILITY ASSESSMENT
 CRA PUMPING PLANTS WATER TREATMENT SYSTEMS REPLACEMENT
 CRA PUMPING PLT RELIABILITY PROGRAM, DISCHARGE LINE COUPLING INSTALLATION
 CRA PUMPING WELL CONVERSION
 CRA QUAGGA MUSSEL BARRIERS
 CRA RADIAL GATES AND SLIDE GATE REHABILITATION
 CRA RADIAL GATES REPLACEMENT
 CRA RELIABILITY PHASE II - PUMPING PLANTS 230KV & 69KV DISCONNECT SWITCH REPLACEMENT
 CRA RELIABILITY PROGRAM - DISCHARGE VALVE LUBRICATORS
 CRA RELIABILITY PROGRAM - MOTOR BREAKER FAULTY CURRENT STUDY (5 PLANTS)
 CRA RELIABILITY PROGRAM PHASE 6 (AQUEDUCT PHASE 6 REHAB.) - SPEC 1568
 CRA RELIABILITY PHASE II - PUMPING PLANT SWITCH HOUSE FAULT CURRENT PROTECTION
 CRA SAND TRAP EQUIPMENT UPGRADES
 CRA SEISMIC EVALUATION - SWITCH HOUSE AND PUMP ANCHORAGE
 CRA SEISMIC UPGRADE OF 6.9KV SWITCH HOUSES
 CRA SERVICE CONNECTION DWCV-2T VALVES REPLACEMENT AND STRUCTURE CONSTRUCTION
 CRA SERVICE CONNECTION DWCV-4 VALVES REPLACEMENT
 CRA SIPHON REHAB
 CRA SIPHONS, TRANSITIONS, CANALS, AND TUNNELS REHABILITATION AND IMPROVEMENTS
 CRA SURGE CHAMBER DISCHARGE LINE BY-PASS COVERS
 CRA SWITCHRACKS & ANCILLARY STRUCTURES EROSION CONTROL
 CRA TRANSFORMER OIL AND SODIUM HYPOCHLORITE CONTAINMENT
 CRA TRANSITION STRUCTURE AND MANHOLE COVERS REPLACEMENT
 CRA UPS REPLACEMENT
 CRA VILLAGES DOMESTIC WATER MAIN DISTRIBUTION REPLACEMENT STUDY
 CRA WATER DISTRIBUTION SYSTEM REPLACEMENT AND CRA ROADWAY ASPHALT REPLACEMENT - ALL PP
 CUF DECHLORINATION SYSTEM
 DAM SLUICWAYS AND OUTLETS REHABILITATION

**TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS**

Description

Conveyance and Aqueduct Facilities

DANBY TOWER FOOTER REPLACEMENT
DANBY TOWERS FOUNDATION REHABILITATION
DESERT FACILITIES FIRE PROTECTION SYSTEMS UPGRADE
DESERT LAND ACQUISITIONS
DESERT PUMP PLANT OIL CONTAINMENT
DESERT ROADWAY IMPROVEMENT
DESERT SEPTIC SYSTEM
DESERT SEWER SYSTEM REHABILITATION
DESERT WATER TANK ACCESS - FIRE WATER, CIRCULATING WATER, DOMESTIC WATER- STUDY
DISCHARGE LINE ISOLATION BULKHEAD COUPLINGS
DISTRIBUTION SYSTEM FACILITIES - REHABILITATION PROGRAM
DISTRIBUTION SYSTEM FACILITIES REHABILITATION PROGRAM - MAINTENANCE & STORAGE SHOP (PC-1)
DISTRIBUTION SYSTEM RELIABILITY PROGRAM - PHASE 2
DVL INLET / OUTLET TOWER FISH SCREENS REPLACEMENT
DVL TO SKINNER TRANSMISSION LINE STUDY
E. THORNTON IBBETSON GUEST QUARTERS
EAGLE AND HINDS EQUIPMENT WASH AREA UPGRADE
EAGLE KITCHEN UPGRADE
EAGLE MOUNTAIN PUMPING PLANT SCADA SYSTEM
EAGLE MOUNTAIN SAND TRAPS STUDY
EAGLE MOUNTAIN SIPHONS SEISMIC VULNERABILITY STUDY
EAGLE MTN SAND TRAPS STUDY
EAGLE ROCK ASPHALT REPAIR PROJECT
EAGLE ROCK MAIN ROOF REPLACEMENT
ENHANCED VAPOR RECOVERY UPGRADES FOR GASOLINE DISPENSERS
ENVIRONMENTAL MITIGATION
ETIWANDA PIPELINE LINER REPAIR
ETIWANDA RESERVOIR LINER REPAIR
FUTURE SYSTEM RELIABILITY PROJECTS
GARVEY RESERVOIR - AUTOMATED DATA ACQUISITION SYSTEM
GARVEY RESEVOIR AUTOMATED DATA ACQUISITON SYSTEM REPLACEMENT
GENE & INTAKE P.P. - FREQUENCY PROTECTION RELAY REPLACEMENT
GENE & INTAKE PUMPING PLANT SURGE CHAMBER OUTLET GATES RE-COATING
GENE & INTAKE PUMPING PLANTS - REPLACE UNDER FREQUENCY PROTECTION RELAY
GENE AIR CONDITION
GENE CAMP STATION SERVICE TRANSFORMER REPLACEMENT
GENE PUMPING PLANT - AIR STRIP EXTENSION PROJECT
GENE PUMPING PLANT - HEAVY EQUIPMENT SERVICE PIT
GENE PUMPING PLANT - PEDDLER SUBSTATION REPLACEMENT
GENE PUMPING PLANT - SCADA SYSTEM
GENE PUMPING PLANT EXPANSION JOINT REHABILITATION
GENE PUMPING PLANT MAIN TRANSFORMER AREA
GENE PUMPING PLANT STANDBY GENERATOR REPLACEMENT
GENE STORAGE BUILDING REPLACEMENT
GENE STORAGE WAREHOUSE REPLACEMENT
HEADGATE OPERATORS & CIRCUIT BREAKERS REHAB.
HIGHLAND PIPELINE CONSTRUCTION
HINDS EAGLE & IRON MOUNTAINS STORAGE BUILDINGS
HINDS PUMPING PLANT DISCHARGE VALVE PIT PLATFORM REPLACEMENT
HINDS PUMPING PLANT EQUIPMENT WASH AREA UPGRADES
HINDS PUMPING PLANT SCADA SYSTEM
HINDS PUMPING PLANT STANDBY GENERATOR REPLACEMENT
INLAND FDR, ARROWHEAD TUNNELS REDESIGN
INLAND FDR, ARROWHEAD WEST TUNNEL CONSTRUCTION
INLAND FDR, CONTRACT 9, CONSTRUCTION OF RIVERSIDE PPLN SOUTH
INLAND FDR, OWNER CONTROLLED INSURANCE PROGRAM
INLAND FDR, REACH 4, RUSD PPLN
INLAND FDR-CNTR #1/DEVIL CYN-WATERMAN RD
INLAND FDR-CNTR #4-SOFT GRND TNL/SANTA ANA
INLAND FDR-CONT #8-PIPEL PARALLEL TO DAVIS RD
INLAND FDR-ENVIRON. MITIG.
INLAND FEEDER - RIGHT OF WAY AND EASEMENT PROCUREMENT
INLAND FEEDER CONTINGENCY
INLAND FEEDER COST OF LAND AND RIGHT OF WAY
INLAND FEEDER ENVIRONMENTAL MITIGATION
INLAND FEEDER GROUNDWATER MONITORING
INLAND FEEDER HIGHLAND PIPELINE CLAIMS COST
INLAND FEEDER HIGHLAND PIPELINE CONSTRUCTION
INLAND FEEDER HIGHLAND PIPELINE DESIGN
INLAND FEEDER MENTONE PIPELINE CONSTRUCTION
INLAND FEEDER MENTONE PIPELINE DESIGN
INLAND FEEDER MENTONE PIPELINE RUSD CONSTRUCTION
INLAND FEEDER OWNER CONTROLLED INSURANCE PROGRAM
INLAND FEEDER PROGRAM REMAINING BUDGET/CONTINGENCY
INLAND FEEDER PROJECT MANAGEMENT SUPPORT
INLAND FEEDER PURCHASE OF LAND AND RIGHT OF WAY

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Conveyance and Aqueduct Facilities

INLAND FEEDER RAISE BURIED STRUCTURES AND REALIGN DAVIS RD.
 INLAND FEEDER REVERSE OSMOSIS PLANT
 INLAND FEEDER RIVERSIDE BADLANDS TUNNEL CONSTRUCTION
 INLAND FEEDER RIVERSIDE NORTH PIPELINE DESIGN
 INLAND FEEDER RUSD CLAIMS DEFENSE
 INLAND FEEDER STUDIES
 INLAND FEEDER UNDERGROUND STORAGE TANK REMOVAL & ABOVEGROUND STORAGE TANK INSTALLATION
 INLAND FEEDER, ARROWHEAD EAST TUNNEL
 INLAND FEEDER, ARROWHEAD TUNNELS CONSTRUCTION
 INLAND FEEDER, CONTRACT #5, OPAL AVENUE PORTAL / BADLANDS TUNNEL
 INLAND FEEDER, CONTRACT #7, RIVERSIDE NORTH PIPELINE CONSTRUCTION
 INLAND FEEDER, PROGRAM MANAGEMENT
 INLAND FEEDER/SBMWD HIGHLAND INTERTIE BYPASS LINE REHAB
 INSULATION JOINT TEST STATIONS
 INTAKE AND POWER COMMUNICATION LINE RELOCATION
 INTAKE POWER AND COMMUNICATIONS LINE RELOCATION
 INTAKE PPLANT - POWER & COMMUNICATION LINE REPLACEMENT
 INTAKE PUMPING PLANT - COOLING AND REJECT WATER DISCHARGE TO LAKE HAVASU
 INTAKE PUMPING PLANT AUTOMATION PROGRAMMING
 INTAKE PUMPING PLANT INSTRUMENTATION REPLACEMENT
 INTAKE PUMPING PLANT INSTRUMENTATION REPLACEMENT & AUTOMATION
 INTAKE PUMPING PLANT INSTRUMENTATION REPLACEMENT & AUTOMATION (4 PLANTS)
 INTAKE PUMPING PLANT POWER & COMMUNICATION LINE REPLACEMENT
 INTAKE PUMPING PLANT SCADA SYSTEM
 INTAKE PUMPING PLANT STANDBY GENERATOR REPLACEMENT
 IRON MOUNTAIN GENERATOR REPLACEMENT
 IRON MOUNTAIN PUMPING PLANT
 IRON MOUNTAIN PUMPING PLANT DELIVERY LINE NO. 1 RELINING
 IRON MOUNTAIN PUMPING PLANT HOUSING REPLACEMENT
 IRON MOUNTAIN PUMPING PLANT SCADA SYSTEM
 IRON MOUNTAIN SERVICE PIT REHABILITATION
 JULIAN HINDS PUMPING PLANT DELIVERY PIPE EXPANSION JOINT PHASE 2 REPAIRS
 JULIAN HINDS PUMPING PLANT DELIVERY PIPE EXPANSION JOINT PHASE 1 REPAIR
 LAKE MATHEWS FOREBAY & HEADWORK FACILITY & EQUIPMENT
 LAKE MATHEWS FOREBAY WALKWAY REPAIRS
 LAKE MATHEWS ICS
 LAKE MATHEWS INTERIM CHLORINATION SYSTEM
 LAKE SKINNER - OUTLET CONDUIT FLOWMETER INSTALLATION
 LAKE SKINNER BYPASS PIPELINE NO. 2 CATHODIC PROTECTION
 LAKE SKINNER OUTLET CONDUIT
 LAKEVIEW PIPELINE LEAK REPAIR AT STA. 2510+49
 LAVERNE FACILITIES - EMERGENCY GENERATOR
 LAVERNE FACILITIES - MATERIAL TESTING
 LOWER FEEDER EROSION PROTECTION
 MAGAZINE CANYON - VALVE REPLACEMENT FOR SAN FERNADO TUNNEL (STATION 778+80)
 MAGAZINE CANYON OIL & WATER SEPARATOR
 MAGAZINE CANYON OIL/WATER SEPARATOR
 MAPES LAND ACQUISITION
 MENTONE PPLN, RUSD, DEFENSE OF CLAIM
 MILE 12 FLOW AND CHLORINE MONITORING STATION UPGRADES
 MILE 12 POWER LINE & FLOW MONITORING EQUIPMENT STUDY
 MILLS PLANT SUPPLY PUMP STATION STUDY
 MINOR CAP FY 2011/12
 MOTOR BREAKER FAULTY (5 PPLANTS)
 NEWHALL TUNNEL - REPAIR STEEL LINER
 NEWHALL TUNNEL - UPGRADE LINER SYSTEM
 NITROGEN STORAGE STUDY AT DVL, INLAND FEEDER PC-1, AND LAKE MATHEWS
 OC 44 SERVICE CONNECTIONS & EOC#2 METER ACCESS ROAD REPAIR
 OC 88 PUMP PLANT FIRE PROTECTION STUDY
 OC-71 SERVICE CONNECTION REPAIRS
 OLINDA PCS FACILITY REHABILITATION AND UPGRADE
 OLINDA PRESSURE CONTROL STRUCTURE FACILITY REHABILITATION AND UPGRADE
 ORANGE COUNTY 44 SERVICE CONNECTIONS & EOC#2 METER ACCESS ROAD REPAIR
 ORANGE COUNTY 88 PUMP PLANT FIRE PROTECTION STUDY
 OWNER CONTROLLED INSURANCE PROGRAM
 PALO VERDE VALLEY LAND PURCHASE - 16,000 ACRES
 PALOS VERDES FEEDER REHABILITATION OF DOMINGUEZ CHANNEL
 PALOS VERDES RESERVOIR SPILLWAY MODIFICATION
 PROJECT MANAGEMENT SUPPORT
 PUDDINGSTONE RADIAL GATE REHABILITATION
 PURCHASE OF LAND AND RIGHT OF WAY
 QUAGGA MUSSEL STUDY
 R&R FOR CRA
 REPAIR UPPER FEEDER LEAKING EXPANSION JOINT
 REPAIRS TO TUNNELS
 RIALTO FEEDER REPAIR @ STA. 3662+23

**TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS**

Description

Conveyance and Aqueduct Facilities

RIALTO FEEDER REPAIR OF ANOMALOUS PIPE SECTION
 RIVERSIDE BADLANDS TUNNEL CONSTRUCTION
 RIVERSIDE BRANCH - ALESSANDRO BLVD. LEFT LAND TURN LANE
 RIVERSIDE BRANCH - CONSTRUCTION OF CONTROL PANEL DISPLAY WALL
 RIVERSIDE NORTH PIPELINE DESIGN & CONSTRUCTION
 RIVERSIDE SOUTH PIPELINE CONSTRUCTION
 SAN DIEGO PIPELINE REPAIR AT STATION 1268+57
 SAN FERNANDO TUNNEL STATION 778+80 VALVE REPLACEMENT
 SAN GABRIEL TOWER SEISMIC ASSESSMENT
 SAN GABRIEL TOWER SLIDE GATE REHABILITATION
 SAN JACINTO TUNNEL EAST ADIT REHABILITATION
 SAN JACINTO TUNNEL, WEST PORTAL
 SAN JOAQUIN RESERVOIR - NEW DESIGN
 SAN JOAQUIN RESERVOIR IMPROVEMENT- FLOATING COVER
 SAN JOAQUIN RESERVOIR IMPROVEMENTS
 SAN JOAQUIN RESERVOIR IMPROVEMENTS STUDY
 SAND TRAP CLEANING EQUIPMENT AND TRAVELING CRANE STUDY
 SANTA ANA RIVER BRIGDE SEISMIC RETROFIT
 SANTIAGO TOWER ACCESS ROAD UPGRADE
 SANTIAGO TOWER PATROL ROAD REPAIR
 SD5 REPAIR
 SECOND LOWER FEEDER STRAY CURRENT MITIGATION SYSTEMS REFURBISHMENT
 SECURITY FENCING AT OC-88 PUMPING PLANT
 SEISMIC EVALUATION OF CRA STRUCTURES
 SEISMIC PROGRAM
 SEISMIC UPGRADE OF 11 FACILITIES OF THE CONVEYANCE & DISTRIBUTION SYSTEM
 SEPULVEDA FEEDER CORROSION INTERFERENCE MITIGATION
 SEPULVEDA FEEDER REPAIR AT STATION 1099
 SEPULVEDA FEEDER STRAY CURRENT MITIGATION SYSTEM REFURBISHMENT
 SERVICE CONNECTION & EOCF #2 METER ACCESS ROAD UPGRADE & BETTERMENT
 SERVICE CONNECTION DWCV-2T VALVES REPLACEMENT AND STUCTURE CONSTRUCTION
 SKINNER BR - IMPROVE CABAZON RADIAL GATE FACILITY
 SUCTION & DISCHARGE LINES EXPANSION JOINT STUDY
 SWITCHYARDS AND HEAD GATES REHAB
 TEMESCAL HYDRO-ELECTRIC PLANT ACCESS ROAD UPGRADE
 TEMESCAL POWER PLANT ACCESS ROAD PAVING
 TRANSFORMER OIL & CHEMICAL UNLOADING PAD CONTAINMENT
 TRANSFORMER OIL AND SODIUM HYPOCHLORITE CONTAINMENT PROJECT
 U.S. BUREAU OF LAND MANAGEMENT LAND ACQUISITION
 UPPER FEEDER CATHODIC PROTECTION SYSTEM
 UPPER FEEDER GATES REHABILITATION PROJECTS
 UPPER FEEDER LEAKING EXPANSION JOINT REPAIR
 VALLEY BRANCH - PIPELINE CORROSION TEST STATION
 WASTEWATER SYSTEM REHABILITATION - GENE/IRON MTN
 WASTEWATER SYSTEM REHABILITATION - HINDS/EAGLE MTN
 WEST VALLEY FEEDER #2 CATHODIC PROTECTION SYSTEM REHABILITATION
 WHITE WATER SIPHON PROTECTION
 WHITEWATER SIPHON EROSION PROTECTION
 WHITEWATER SIPHON PROTECTION STRUCTURE

Sub-total Conveyance and Aqueduct facilities costs

\$74,568,374

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Distribution Facilities

108TH STREET PRESSURE CONTROL STRUCTURE VALVE REPLACEMENT
 42" CONICAL PLUG VALVE REPLACEMENT
 ACCUSONIC FLOW METER UPGRADE
 ACCUSTIC FIBER OPTIC MONITORING OF PCCP LINES
 ALAMEDA CORRIDOR PIPELINE
 ALL FACILITIES - WATER DISCHARGE ELIMINATION
 ALL FACILITIES, INSPECTION AND REPLACEMENT OF CRITICAL VACUUM VALVES
 ALL FEEDERS - MANHOLE LOCKING DEVICE RETROFIT
 ALL PUMPING PLANTS - INSTALL HYPOCHLORINATION STATIONS
 ALLEN MCCOLLOCH PIPELINE 2010 REFURBISHMENT
 ALLEN MCCOLLOCH PIPELINE CATHODIC PROTECTION
 ALLEN MCCOLLOCH PIPELINE INTERCONNECTIONS
 ALLEN MCCOLLOCH PIPELINE LOCAL CONTROL MODIFICATIONS
 ALLEN MCCOLLOCH PIPELINE REPAIR
 ALLEN MCCOLLOCH PIPELINE REPAIR - CARBON FIBER LINING REPAIR
 ALLEN MCCOLLOCH PIPELINE REPAIR - SERVICE CONNECTIONS UPGRADES
 ALLEN MCCOLLOCH PIPELINE REPAIR - STATION 276+63
 ALLEN MCCOLLOCH PIPELINE REPAIR - SURGE SUPPRESSION SYSTEM AT OC88A
 ALLEN MCCOLLOCH PIPELINE REPAIR - VALVE ACTUATOR REPLACEMENTS
 ALLEN MCCOLLOCH PIPELINE REPAIR SERVICE CONNECTIONS SIMPLIFICATION
 ALLEN MCCOLLOCH PIPELINE STRUCTURE - ROOF SLAB REPAIRS
 ALLEN MCCOLLOCH PIPELINE VALVE VAULT REPAIRS
 ALLEN-MCCOLLOCH CORROSION/INTERFERENCE MITIGATION, STATION 719+34 TO 1178+02
 ALLEN-MCCOLLOCH PIPELINE
 ALLEN-MCCOLLOCH PIPELINE OC-76 TURNOUT RELOCATION
 ALLEN-MCCOLLOCH PIPELINE PCCP REHABILITATION
 ALLEN-MCCOLLOCH PIPELINE REFURBISHMENT - STAGE 2
 ALLEN-MCCOLLOCH PIPELINE VALVE AND SERVICE CONNECTION VAULT REPAIRS
 AMP -SERVICE CONNECTIONS UPGRADES
 AMP -VALVE ACTUATOR REPLACEMENTS
 AMP COMPLETION RESOLUTION RIGHT OF WAY ISSUES
 AMR - RTU UPGRADE - PHASE 2
 ANODE WELL REPLACEMENT FOR ORANGE COUNTY AND RIALTO FEEDERS
 APPIAN WAY VALVE REPLACEMENT
 ARROW HIGHWAY PROPERTY DEVELOPMENT
 ASPHALT REPAIRS TO PERIMETER OF SEPULVEDA PCS
 ASSESS THE CONDITION OF METROPOLITAN'S PRESTRESSED CONCRETE CYLINDER PIPE
 ASSESS THE CONDITIONS OF MET'S
 ASSESSMENT OF PRESTRESSED CONCRETE CYLINDER PIPELINES - PHASE 3
 AULD VALLEY CONTROL STRUCTURE AREA FACILITIES
 AUTOMATED RESERVOIR WATER QUALITY MONITORING
 AUTOMATIC METER READING SYSTEM - RTU UPGRADE PHASE 2
 AUTOMATIC METER READING SYSTEM UPGRADE
 AUTOMATION COMMUNICATION UPGRADE
 AUTOMATION DOCUMENTATION SURVEY F/A
 BAR 97- ENHANCED AREA VEHICLE TESTING
 BATTERY MONITORING SYSTEM FOR AUTOMATIC METER READING SYSTEM
 BIXBY VALVE REPLACEMENT
 BLACK METAL MOUNTAIN ELECTRICAL TRANSFORMER
 BOX SPRINGS FEEDER BROKEN BACK REPAIR
 BOX SPRINGS FEEDER BROKEN BACK REPAIR PHASE I
 BOX SPRINGS FEEDER PHASE 3 AND 4 ENVIRONMENTAL MONITORING
 BOX SPRINGS FEEDER REPAIR - PHASE II
 BOX SPRINGS FEEDER REPAIRS PHASE 3 AND PHASE 4
 C&D CRANE INSTALLATION AT OC-88 PUMPING PLANT
 CAJALCO CREEK DAM MANHOLE COVER RETROFIT
 CAJALCO CREEK DETENTION DAM SPILLWAY ACCESS ROAD
 CALABASAS FEEDER CARBON FIBER /BROKEN BACK REPAIR
 CALABASAS FEEDER INTERFERENCE MITIGATION
 CALABASAS FEEDER PCCP REHABILITATION
 CALABASAS FEEDER REPAIR, STUDY
 CAPITAL PROGRAM FOR PROJECTS COSTING LESS THAN \$250,000 FOR FY 2010/11
 CAPITAL PROJECTS COSTING LESS THAN \$250,000 FOR FY2008-09
 CARBON CREEK PRESSURE CONTROL STRUCTURE SEISMIC ASSESSMENT
 CASA LOMA AND SAN DIEGO CANAL LINING STUDY - PART 2
 CASA LOMA SIPHON BARREL 1 & 2 DVL AND SD CANAL FLOW METER REPLACEMENT
 CASA LOMA SIPHON BARREL NO. 1 JOINT REPAIR
 CASA LOMA SIPHON NO 1, CASA LOMA CANAL & SAN DIEGO CANAL FLOW METER REPLACEMENT
 CATHODIC PROTECTION FOR THE FOOTHILL FEEDER
 CATHODIC PROTECTION SYSTEM UPGRADES
 CCP-PHASE 2 CONSTRUCTION
 CDSRP - DISCHARGE ELIMINATION
 CDSRP - ENTRAINED AIR IN UPPER FEEDER PIPELINE STUDY

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Distribution Facilities

CDSRP - SEPULVEDA FEEDER REPAIRS
 CDSRP - SEPULVEDA TANKS RECOATING
 CENTRAL POOL AUGMENTATION - TUNNEL AND PIPELINE & RIGHT-OF-WAY ACQUISITION
 CENTRAL POOL AUGMENTATION (CPA) PROGRAM - PIPELINE AND TUNNEL ALIGNMENT
 CENTRAL POOL AUGMENTATION AND WATER QUALITY PROJECT (CPAWQP)
 CHEMICAL INVENTORY AND USAGE REWRITE AND ELECTRICAL. SYSTEM LOG
 CHEMICAL UNLOADING FACILITY RETROFIT
 CHEVALIER FALCON MILLING MACHINE
 COASTAL JUNCTION REVERSE FLOW BYPASS
 COASTAL PRESSURE CONTROL STRUCTURE ROOF REPLACEMENT
 COLLIS AVENUE VALVE REPLACEMENT
 COLLIS VALVE REPLACEMENT
 COLORADO RIVER AQUEDUCT CASA LOMA SIPHON BARREL NO. 1 PROJECT NO. 2 - PERMANENT REPAIRS
 COMMUNICATIONS STRUCTURE ALARM MONITORING
 COMPREHENSIVE INFORMATION SECURITY ASSESSMENT PHASE III
 CONSTRUCTION PHASE 2
 CONTRACT & LITIGATION TASKS -CONTRACT # 1396
 CONTROL SYSTEM DATA STORAGE AND REPORTING
 CONTROL SYSTEM DRAWING & DOCUMENTATION UPDATE
 CONTROL SYSTEM ENHANCEMENT PROGRAM (CSEP) - DIGITAL SUBNET STANDARDIZATION
 CONTROL SYSTEMS AUTOMATION COMMUNICATION UPGRADE
 CONTROLS COMMUNICATIONS FRAME RELAY CONVERSION - APPROPRIATED
 CONVERSION OF DEFORMATION SURVEY MONITORING AT GENE WASH, COPPER BASIN, AND DIEMER BASIN 8
 CONVEYANCE AND DISTRIBUTION SYSTEM ELECTRICAL STRUCTURES REHABILITATION
 CONVEYANCE AND DISTRIBUTION SYSTEM REHABILITATION PROGRAM (CDSRP) - CURRENT DRAIN STATIONS
 COPPER BASIN ICS
 COPPER BASIN SEWER SYSTEM
 CORONA POWER PLANT REPLACE EMERGENCY GENERATOR
 CORROSION MATERIALS TESTING FACILITY SCADA UPGRADE
 COVINA PRESSURECONTROL FACILITY
 COYOTE CREEK NORTHERN PERIMETER LANDSCAPING
 COYOTE PRESSURE CONTROL STRUCTURE ROOF REPLACEMENT
 CPA PIPELINE & TUNNEL ALIGNMENT
 CPA PIPELINE & TUNNEL ALIGNMENT - NON FUNDED PORTION
 CPA PIPELINE & TUNNEL ALIGNMENT - STUDY
 CPA WATER TREATMENT PLANT - NON FUNDED PORTION
 CPA WATER TREATMENT PLANT - RIGHT OF WAY - PHASE 2
 CPAWQP - PHASE 2
 CPAWQP - STUDY AND LAND ACQUISITION - CONTINGENCY
 CPAWQP - STUDY AND LAND ACQUISITION - PIPELINE & TUNNEL ALIGNMENT - STUDY
 CPAWQP - STUDY AND LAND ACQUISITION - RIGHT-OF-WAY-ACQUISITION
 CPAWQP - STUDY AND LAND ACQUISITION - WATER TREATMENT PLANT - RIGHT OF WAY - PHASE 2
 CPAWQP - STUDY AND LAND ACQUISITION - WATER TREATMENT PLANT - STUDY
 CRA - PC-1 EFFLUENT OPEN CHANNEL TRASH RACK
 CRA CABAZON & POTRERO SHAFT COVERS
 CRA CONTROL INTEGRATION
 CRA PROTECTIVE SLAB AT STATION 9704+77
 CROSS CONNECTION PREVENTION PROGRAM - PHASE II CONSTRUCTION
 CROSS CONNECTION PREVENTION PROJECT, COMPLETE PRELIMINARY DESIGN AND CEQA DOCUMENTATION
 CSEP - ELECTRONIC SYSTEM LOG (ESL)
 CSEP - ENERGY MANAGEMENT SYSTEM PHASE II
 CSEP - ENHANCED DISTRIBUTION SYSTEM CONTROL PROJECT
 CSEP - IMPLEMENTATION
 CSEP - OPERATIONS & BUSINESS DATA INTEGRATION PILOT
 CSEP - PLANT INFLUENT REDUNDANT FLOW METERING AND SPLITTING
 CSEP - PLC PHASE 2 - LIFE-CYCLE REPLACEMENT
 CSEP - PLC STANDARDIZATION
 CSEP - PLC STANDARDIZATION PHASE II
 CSEP - POWER MANAGEMENT SYSTEM
 CSEP - WATER PLANNING APPLICATION
 CSEP IMPLEMENTATION
 CSEP- SMART OPS (FORMERLY REAL TIME OPERATIONS SIMULATION)
 CURRENT DRAIN STATIONS
 DAM REHABILITATION & SAFETY IMPROVEMENTS ST. JOHN'S CANYON CHANNEL EROSION MITIGATION
 DANBY TOWER FOUNDATION INVESTIGATION AND SHORT TERM MITIGATION
 DEODERA PCS PAVEMENT UPGRADE & BETTERMENT
 DESERT BRANCH - REPLACE STOLEN COPPER GROUND WIRE FOOTINGS/GROUNDING, AND COPPER PIPING
 DESERT BRANCH PUMP PLANT AUXILIARY (STATION SERVICE)
 DESERT BRANCH, PURCHASE & INSTALL 5 PORT VIDEO CONFERENCING
 DESERT FACILITIES DOMESTIC WATER GAC SYSTEM INSTALLATION
 DESERT HIGH VOLTAGE TRANSMISSION TOWERS - REPLACE COPPER GROUND WIRES ON
 DETAIL SEISMIC EVALUATION OF WATER STORAGE TANK
 DFP - ELIMINATE BACKUP GENERATOR TIE-BUS & INSTALL MANUAL TRANSFER SWITCH FOR CHLORINE SCRUBBER
 DIEMER FILTRATION PLANT - SLOPE REPAIR
 DISCHARGE ELIMINATION
 DIST SYS-AIR RELEASE & VAC VALVE MODS

**TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS**

Description

Distribution Facilities

DISTRIBUTION SYSTEM - CAPP CONSTRUCTION PACKAGES 9,11,12
DISTRIBUTION SYSTEM - STANDPIPE STRENGTHENING PROGRAM
DISTRIBUTION SYSTEM - STATIONARY CORROSION REFERENCE
DISTRIBUTION SYSTEM - TREATED WATER CROSS CONNECTION PREVENTION PROJECT - FINAL DESIGN & CONSTRUCTION
DISTRIBUTION SYSTEM ASSESSMENTS/UPGRADES OF LOS ANGELES COUNTY
DISTRIBUTION SYSTEM ASSESSMENTS/UPGRADES OF RIVERSIDE AND SAN DIEGO COUNTY
DISTRIBUTION SYSTEM ASSESSMENTS/UPGRADES OF SAN BERNARDINO COUNTY
DISTRIBUTION SYSTEM CONTROL & EQUIP UPGRADE - ENHANCED DISTRIB. SYSTEM AUTOMATION PHASE I
DISTRIBUTION SYSTEM EQUIPMENT & INSTRUMENTATION UPGRADES
DISTRIBUTION SYSTEM INFRASTRUCTURE PROTECTION IMPROVEMENTS FOR ORANGE COUNTY
DISTRIBUTION SYSTEM REHABILITATION PROGRAM - ASSESS THE STATE OF MWD'S DISTRIBUTION SYSTEM
DISTRIBUTION SYSTEM REPLACEMENT OF AREA CONTROL SYSTEMS - WILLOWGLEN RTUS ADMINISTRATION
DISTRIBUTION SYSTEM REPLACEMENT OF AREA CONTROL SYSTEMS (DSRACS)
DISTRICT WIDE - ENHANCED VAPOR RECOVERY PHASE 2 GASOLINE DISPENSING
DSRACS - OPERATIONS CONTROL CENTER - CONTRACT #1396
DSRACS - SKINNER AREA
DSRACS - SOFTWARE DEVELOPMENT COST
DSRACS - WEYMOUTH
DVL & CONTROL SYSTEM REPLACEMENT INVESTIGATION & PREPARATION FOR PRELIMINARY DESIGN
EAGLE EQUIPMENT WASH AREA UPGRADE
EAGLE ROCK - ASPHALT REHABILITATION
EAGLE ROCK - FIRE PROTECTION AT THE WESTERN AREA OF THE EAGLE ROCK CONTROL CENTER PERIMETER GROUNDS
EAGLE ROCK CONTROL CENTER FIREHYDRANT
EAGLE ROCK LATERAL INTERCONNECTION REPAIR
EAGLE ROCK MAIN BUILDING ROOF REPLACEMENT - STUDY
EAGLE ROCK OCC - REHAB CONTROL ROOM
EAGLE ROCK OPERATIONS CONTROL CENTER
EAGLE ROCK RESIDENCE CONVERSION
EAGLE ROCK TOWER AND PUDDINGSTONE SPILLWAY GATES REHABILITATION
EAGLE ROCK TOWER SLIDEGATE REHABILITATION
EAST INFLUENT CHANNEL REPAIR PROJECT
EAST ORANGE COUNTY FEEDER #2 REPAIR
EAST VALLEY FEEDER VALVE STRUCTURE ELECTRICAL UPGRADE
EASTERN AND DESERT REGIONS PLUMBING RETROFIT
EASTERN REGION PCCP JOINT MODIFICATION 2012
E-DISCOVERY STORAGE MANAGEMENT SYSTEM UPGRADE
ELECTRIC CURRENT DRAIN STATION INSTALLATIONS
ELECTRICAL UPGRADES AT 15 STRUCTURES IN THE OC REGION
ELECTROMAGNETIC INSPECTIONS OF PCCP LINES
ELECTRONIC SYSTEM LOG (ESL)
ENERGY MANAGEMENT SYSTEM - PHASE 2
ENHANCED DISTRIBUTION SYSTEM AUTOMATIC FLOW TRANSFERS SOFTWARE REDEVELOPMENT
ENHANCED DISTRIBUTION SYSTEM AUTOMATION PHASE I
ENHANCED DISTRIBUTION SYSTEM AUTOMATION PHASE II
ENVIRONMENTAL REGULATORY AGREEMENTS AND OTHER REGULATORY AGENCY
EQUIPMENT UPGRADE AT THE NORTH PORTAL OF THE HOLLYWOOD TUNNEL
ETIWANDA / RIALTO PIPELINE INTER-TIE CATHODIC PROTECTION
ETIWANDA CAVITATION FACILITY INFRASTRUCTURE REHABILITATION
ETIWANDA CAVITATION TEST FACILITY COMMUNICATION AND CONTROL SYSTEM REPLACEMENT
ETIWANDA HEP NEEDLE VALVE OPERATORS
ETIWANDA PIPELINE - LINING REPLACEMENT
ETIWANDA PIPELINE AND CONTROL FACILITY - RIGHT OF WAY
ETIWANDA PIPELINE AND CONTROL FACILITY - AS BUILTS
ETIWANDA PIPELINE AND CONTROL FACILITY - CATHODIC PROTECTION
ETIWANDA PIPELINE AND CONTROL FACILITY - EMERGENCY DISCHARGE CONDUITS
ETIWANDA PIPELINE AND CONTROL FACILITY - LANDSCAPING AND IRRIGATION
ETIWANDA PIPELINE AND CONTROL FACILITY - RESIDENCES
ETIWANDA PIPELINE AND CONTROL FACILITY - RIALTO FEEDER TO UPPER PIPELINE
ETIWANDA PIPELINE LINING REPAIRS
ETIWANDA RESERVOIR - EXTEND OUTLET STRUCTURE
FACILITY AND PROCESS RELIABILITY ASSESSMENT
FAIRPLEX AND WALNUT PCS VALVES REPLACEMENT
FILTER ISOLATION GATE AND BACKWASH CONTROL WEIR COVERS MODULES 1-6
FLOW METER REPLACEMENT PROJECT
FLOWMETER MODIFICATION - LAKE SKINNER INLET, ETIWANDA EFFLUENT & WADSWORTH CROSS CHANNEL
FOOTHILL & SEPULVEDA FEEDER PCCP CARBON FIBER JOINT REPAIRS
FOOTHILL FEEDER - CASTAIC VALLEY BLOW-OFF VALVES REPLACEMENT
FOOTHILL FEEDER ADEN AVE. REHABILITATION
FOOTHILL FEEDER CARBON FIBER REPAIR
FOOTHILL FEEDER CATHODIC PROTECTION
FOOTHILL FEEDER PIPELINE REPLACEMENT PROJECT
FOOTHILL FEEDER POWER PLANT EXPANSION
FOOTHILL FEEDER REPAIR @ SANTA CLARITA RIVER
FOOTHILL FEEDER, CARBON FIBER REPAIRS
FOOTHILL HYDROELECTRIC RUNNER REPLACEMENT
FOOTHILL PCS - UNINTERRUPTIBLE POWER SOURCE SYSTEMS INSTALLATION

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Distribution Facilities

FOOTHILL PCS FLOOD PUMP INSTALLATION DESIGN DOCUMENTATION
 FOOTHILL PCS INTERNAL VALVE LINERS UPGRADE
 FUTURE SYSTEM RELIABILITY PROGRAM
 GARVEY RESERVOIR - HYPOCHLORITE FEED SYSTEM
 GARVEY RESERVOIR - INSTALL HYPOCHLORINATION STATIONS
 GARVEY RESERVOIR - LOWER ACCESS PAVING ROAD & DRAINS
 GARVEY RESERVOIR CONTROL VALVES REPLACEMENT
 GARVEY RESERVOIR HYPOCHLORITE FEED SYSTEM
 GARVEY RESERVOIR SITE DRAINAGE REPAIRS AND MODIFICATIONS
 GARVEY RESERVOIR SODIUM HYPOCHLORITE FEED SYSTEM REHABILITATION
 GENE & IRON POOLS
 GENE AIR CONDITIONING SYSTEM REPLACEMENT
 GENE MESS HALL AIR CONDITIONING UNIT
 GENE SPARE PARTS WAREHOUSE IMPROVEMENTS
 GLENDALE 01 SERVICE CONNECTION REHAB
 GLENDALE-01 SERVICE CONNECION REHABILITATION AND UPGRADE
 GLENDALE-01 SERVICE CONNECTION REHABILITATION
 GREG AVE PCS FACILITY REHABILITATION
 GREG AVENUE CONTROL STRUCTURE VALVE REPLACEMENT
 GREG AVENUE PCS - PUMP MODIFICATIONS AND NEW CONTROL BUILDING
 GREG AVENUE PCS CONTROL BUILDING INTERIOR REHABILITATION
 HINDS GARAGE ASBESTOS SHEETING REPLACEMENT
 HOLLYWOOD TUNNEL NORTH PORTAL EQUIPMENT UPGRADES
 HVAC MODIFICATIONS FOR ELECTRICAL SAFETY AND RELIABILITY
 HYDRAULIC MODELING PROJECT
 HYDROELECTRIC PLANT CARBON DIOXIDE (CO2) FIRE SUPPRESSION SYSTEM MODIFICATIONS
 HYDROELECTRIC POWER PLANT (HEP) DISCHARGE ELIMINATION
 IAS PROJECTS - CPA
 IAS PROJECTS - DVL-SKINNER
 IAS PROJECTS - MILLS SUPPLY RELIABILITY
 INLAND FEEDER AND LAKEVIEW PIPELINE INTERTIE
 INLAND PCSUST REMOVAL & AST INSTALLATION
 INSTALL MOTION SENSORS IN NEW EXPANSION
 INSTALL TEST LEADS AT FOUR LOCATIONS
 INSULATION JOINT TEST STATIONS
 INTAKE PUMPING PLANT - UNDER FREQUENCY PROTECTION RELAY UPGRADE
 IRON MOUNTAIN - TRANSFORMER OIL TANK RELOCATION
 JENSEN DISTRIBUTION SYSTEM - REPLACEMENT OF AREA CONTROL SYSTEMS - CONTRACT # 1396
 JENSEN FILTRATION PLANT - REPLACE ADMINISTRATION BUILDING AIR CONDITIONING
 JENSEN FILTRATION PLANT - ROAD RECONSTRUCTION
 LA VERNE FACILITIES - BRIDGEPORT E-2-PATH
 LA VERNE FACILITIES - ENERGY CONSERVATION ECM1 - 10
 LA VERNE FACILITIES - EXPANSION OF THE SANITARY SEWER
 LA VERNE FACILITIES - HAZARDOUS WASTE STORAGE
 LA VERNE FACILITIES - MAIN TRANSFORMERS REPLACEMENT
 LA VERNE FACILITIES - MATERIALS TESTING LABORATORY
 LA VERNE FACILITIES - REPLACEMENT OF FLOCCULATOR STUB SHAFT - BASINS 1 & 2
 LA VERNE MACHINE SHOP - AIR CONDITIONING UNIT REPLACEMENT
 LA VERNE MACHINE SHOP - REPAIR HORIZONTAL BORING MILL
 LA-35 DISCHARGE STRUCTURE REPAIRS
 LAKE MATHEWS - CONSTRUCTION OF BACKUP COMPUTER FACILITIES
 LAKE MATHEWS - DIVERSION TUNNEL WALKWAY REPAIR
 LAKE MATHEWS - FACILITY WIDE EMERGENCY WARNING AND PAGING SYSTEM
 LAKE MATHEWS - FOREBAY MCC ROOF IMPROVEMENT
 LAKE MATHEWS - MAIN DAM TOE SEEPAGE COLLECTION
 LAKE MATHEWS - MULTIPLE SPECIES MANAGER'S OFFICE & RESIDENCE
 LAKE MATHEWS - RENOVATION OF BLDGS. 8 & 15, GENERAL ASSEMBLY & ADMIN. BLDG. OFFICE AREAS
 LAKE MATHEWS - RETROFIT LOWER ENTRANCE GATE SWING ARM
 LAKE MATHEWS FOREBAY MCC ROOF IMPROVEMENT
 LAKE MATHEWS MAIN DAM TOE SEEPAGE COLLECTION
 LAKE MATHEWS RETROFIT LOWER ENTRANCE GATE SWING ARM
 LAKE PERRIS BYPASS PIPELINE EXPLORATION
 LAKE PERRIS EMERGENCY STANDBY GENERATOR AND TRANSFER SWITCH REPLACEMENT
 LAKE SKINNER - AERATOR AIR COMPRESSOR REPLACEMENT
 LAKE SKINNER - OUTLET TOWER VALVE REHABILITATION
 LAKE SKINNER - REPLACEMENT AERATOR RING
 LAKE SKINNER AERATOR AIR COMPRESSOR REPLACEMENT
 LAKE SKINNER AREA DISTRIBUTION SYSTEM VALVE REPLACEMENT
 LAKE SKINNER DAM ROAD REHAB
 LAKE SKINNER EAST BYPASS SCREENING STRUCTURES
 LAKE SKINNER OUTLET TOWER CHLORINE SYSTEM MODIFICATION
 LAKE SKINNER WEST BYPASS SCREENING STRUCTURE
 LAKE SKINNER WEST BYPASS SCREENING STRUCTURE REHABILITATION
 LAKE VIEW PIPE LINE REPAIRS
 LAKEVIEW PIPELINE - REPLACE VACUUM/AIR RELEASE
 LAKEVIEW PIPELINE CATHODIC PROTECTION SYSTEM

**TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS**

Description

Distribution Facilities

LAKEVIEW PIPELINE REPAIR
 LOWER FEEDER - CATHODIC PROTECTION
 LOWER FEEDER WR 33 - AREA REPAIR AND REMEDIATION
 MAGAZINE CANYON CANOPY
 MAGAZINE CANYON-ISOLATION GATE JACKING FRAME
 MAPES LAND ACQUISITION
 MICROWAVE COMMUNICATION SITES BUILDING UPGRADE
 MIDDLE CROSS FEEDER CATHODIC PROTECTION
 MIDDLE FEEDER - CATHODIC PROTECTION SYSTEMS
 MIDDLE FEEDER - NORTH CATHODIC PROTECTION SYSTEM
 MIDDLE FEEDER BLOW-OFF VALVE REPLACEMENT AT STA 782+53.16
 MIDDLE FEEDER NORTH CATHODIC PROTECTION SYSTEM
 MIDDLE FEEDER RELOCATION FOR SCE MESA SUBSTATION
 MILLS FILTRATION PLANT - INVESTIGATION TO RELOCATE ACCESS ROAD
 MINOR CAP 08/09 PLACEHOLDER
 MINOR CAP FY 2009/10
 MINOR CAP FY 2012/13
 MINOR CAP FY 2014/16
 MINOR CAPITAL PROJECTS PROGRAM 07/08 - REMAINING FUNDS
 MOUNT OLYMPUS TUNNEL COST RIGHT-OF-WAY (ROW)
 MWD ROAD GUARDRAIL
 NITROGEN STORAGE COMPLIANCE AT DVL, INLAND FEEDER PCS, AND LAKE MATHEWS
 NITROGEN STORAGE STUDY
 NON PCCP LINES CONDITION INSPECTION AND ASSESSMENT
 NORTH PORTAL OF HOLLYWOOD TUNNEL
 NORTH REACH CONSTRUCTION / INSPECTION / CM
 NORTH REACH CONSTRUCTION/ASBUILT
 NORTH REACH ENVIRONMENTAL - CONSTRUCTION
 NORTH REACH FINAL DESIGN & ADV/NTP
 NORTH REACH POST DESIGN / ASBUILT
 NORTH REACH PROGRAM MANAGEMENT - CONSTRUCTION
 NORTHERN PIPELINE ENVIRONMENTAL FINAL DESIGN
 NORTHERN PIPELINE RIGHT OF WAY FINAL DESIGN
 OAK ST. PCS ROOF REPLACEMENT
 OAK STREET PRESSURE CONTROL STRUCTURE ROOF REPLACEMENT - CONSTRUCTION
 OC 44 SERVICE CONNECTIONS & EOC#2 METER ACCESS ROAD REHAB
 OC FEEDER STA 1920+78 BLOWOFF STRUCTURE & RIP-RAP REPAIRS
 OC RESERVOIR SODIUM HYPOCHLORITE PUMP AND PIPING REPLACEMENT
 OC-71 FLOW CONTROL FACILITY
 OC-88 - SECURITY FENCING AT PUMP PLANT
 OC-88 EMERGENCY STANDBY GENERATOR UPGRADE STUDY
 OC-88 PUMP PLANT AIR COMPRESSOR UPGRADE
 OC-88 PUMP STATION FLOW METER UPGRADE
 OC-88 PUMPING PLANT SURGE TANKS UPGRADES
 OLINDA PCS AND SANTIAGO TOWER EMERGENCY GENERATORS
 OLINDA PCS VALVE REPLACEMENT
 OLINDA PRESSURE CONTROL STRUCTURE
 OLINDA PRESSURE CONTROL STRUCTURE AND SANTIAGO TOWER EMERGENCY GENERATORS
 ON-CALL RESOURCES MANAGEMENT APPLICATION
 OPERATIONS CONTROL CENTER AT EAGLE ROCK
 OPERATIONS CONTROL CENTER UPS REPLACEMENT
 OPERATIONS SCOPING STUDY
 ORANGE CO FDR, BLOW-OFF STRUCTURE AND ACCESS ROAD REPAIR
 ORANGE COUNTY - 88 PUMP PLANT AIR COMPRESSOR UPGRADE
 ORANGE COUNTY - 88 SECURITY FENCING AT PUMP PLANT
 ORANGE COUNTY AREA DISTRIBUTION SYSTEM VALVE REPLACEMENT
 ORANGE COUNTY C & D ELECTRICAL IMPROVEMENTS - STUDY
 ORANGE COUNTY C&D INSTRUMENTATION PANEL IMPROVEMENTS
 ORANGE COUNTY C&D TEAM SUPPORT FACILITY
 ORANGE COUNTY CONVEYANCE AND DISTRIBUTION SERVICE CENTER
 ORANGE COUNTY FEEDER CATHODIC PROTECTION
 ORANGE COUNTY FEEDER EXTENSION LINING REPAIR
 ORANGE COUNTY FEEDER INSPECTION
 ORANGE COUNTY FEEDER INTERNAL INSPECTION STUDY
 ORANGE COUNTY FEEDER LINING REPAIRS
 ORANGE COUNTY FEEDER PRESSURE CONTROL STRUCTURES
 ORANGE COUNTY FEEDER RELOCATION IN FULLERTON
 ORANGE COUNTY FEEDER SCHEDULE 37SC CATHODIC PROTECTION
 ORANGE COUNTY FEEDER STA 1920+78 BLOWOFF STRUCTURE & RIP-RAP REPAIRS
 ORANGE COUNTY RESERVOIR - INSTALL HYPOCHLORINATION STATIONS
 ORANGE COUNTY RESERVOIR - PIEZOMETERS & SEEPAGE MONITORING AUTOMATION
 OXIDATION DEMONSTRATION PLANT CONTROL SYSTEM REPLACEMENT
 PALOS ALTOS FEEDER - 108TH ST.
 PALOS VERDES FEEDER - LONG BEACH LATERAL TURNOUT STRUCTURES STA. 1442+15 VALVE REPLACEMENTS
 PALOS VERDES FEEDER PCS - VALVE REPLACEMENT
 PALOS VERDES RESERVOIR - INSTALL HYPOCHLORINATION STATIONS

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Distribution Facilities

PC-1 EFFLUENT OPEN CHANNEL TRASH RACK
 PC-1 EFFLUENT OPEN CHANNEL TRASH RACK PROJECT
 PCCP HYDRAULIC ANALYSES
 PCCP REHABILITATION - PROGRAM MANAGEMENT
 PERIMETER FENCING AT PLACERITA CREEK
 PERMANENT LEAK DETECTION/PIPELINE MONITORING SYSTEM
 PERRIS PCS - UNINTERRUPTIBLE POWER SOURCE SYSTEMS INSTALLATION
 PERRIS PCS ROOF REHAB
 PERRIS PRESSURE CONTROL STRUCTURE ROOF REPLACEMENT
 PERRIS PUMPBACK COVER
 PERRIS VALLEY PIPELINE - DESIGN-BUILD (EMWD)
 PERRIS VALLEY PIPELINE - GENERAL
 PERRIS VALLEY PIPELINE - NORTH REACH
 PERRIS VALLEY PIPELINE - RESERVED FOR STAGE II DESIGN / BUILD
 PERRIS VALLEY PIPELINE - SOUTH REACH
 PERRIS VALLEY PIPELINE - STUDY
 PERRIS VALLEY PIPELINE - TIE-IN (WMWD)
 PERRIS VALLEY PIPELINE - TUNNELS
 PERRIS VALLEY PIPELINE - VALVES
 PERRIS VALLEY PIPELINE DESIGN-BUILD (EMWD)
 PERRIS VALLEY PIPELINE NORTH REACH
 PERRIS VALLEY PIPELINE SOUTH REACH
 PERRIS VALLEY PIPELINE TIE-IN (WMWD)
 PERRIS VALLEY PIPELINE VALVES
 PLACENTIA RAILROAD LOWERING PROJECT
 PLACERITA CREEK PERIMETER FENCING
 PLANT INFLUENT REDUNDANT FLOW METERING AND SPLITTING
 PLC REPLACEMENT PHASE II
 PRESTRESSED CONCRETE CYLINDER PIPE - PHASE 2
 PRESTRESSED CONCRETE CYLINDER PIPE (PCCP) STRUCTURAL PERFORMANCE RISK ANALYSIS
 PRESTRESSED CONCRETE CYLINDER PIPE -PHASE 3
 PROGRAMMATIC ENVIRONMENTAL DOCUMENTATION OF ORANGE COUNTY
 PROGRAMMATIC ENVIRONMENTAL DOCUMENTATION OF SAN BERNARDINO COUNTY
 PROGRAMMABLE LOGIC CONTROLLER (PLC) STANDARDIZATION
 PROGRAMMATIC ENVIRONMENTAL DOCUMENTATION FOR THE LOS ANGELES CO. OPERATING REGION
 PROGRAMMATIC ENVIRONMENTAL DOCUMENTATION FOR THE ORANGE COUNTY OPERATING REGION
 PROGRAMMATIC ENVIRONMENTAL DOCUMENTATION FOR THE RIVERSIDE/SAN DIEGO CO. OPERATING REGION
 PROGRAMMATIC ENVIRONMENTAL DOCUMENTATION FOR THE WESTERN SAN BERNARDINO COUNTY OPERATING REGION
 PUDDINGSTONE SPILLWAY CROSS CONNECTION
 PV RESERVOIR HYPOCHLORITE PUMP AND PIPING REPLACEMENT
 R&R FOR DISTRIBUTION
 REAL PROPERTY ACQUISITION
 RED MOUNTAIN - OCT. 2007 FIRE DAMAGE - COMMUNICATION POWER TOWERS & METER STRUCTURES REPAIR/REPLACE (INCIDENT NO. 2007-1023-0271)
 RED MOUNTAIN HEP FLOOD DAMAGE
 RED MTN COMM. TOWER & METER STRUCTURE
 REHABILITATION OF THE GREG AVE PCS CONTROL BUILDING INTERIOR
 RELOCATION OF ORANGE COUNTY FEEDER
 RELOCATION OF PORTION OF ORANGE COUNTY FEEDER (MWD'S SHARE)
 REMAINING PORTIONS
 REPAIRS TO THE LA-35 DISCHARGE STRUCTURE
 REPLACE 2 FIRE & DOMESTIC WATER SYSTEM
 REPLACE COMMUNICATION LINE TO THE SAN GABRIEL CONTROL TOWER
 REPLACE COPPER GROUNDWIRES ON DESERT HIGH VOLTAGE TRANSMISSION TOWERS
 REPLACE VALVE POSITION INDICATORS
 REPLACEMENT OF COMMUNICATION LINE AT SAN GABRIEL TOWER
 REPLACEMENT/ RELINE AT-RISK PCCP LINES - STAGE 1
 RIALTO FEEDER BROKEN BACK REPAIR
 RIALTO FEEDER VALVE STRUCTURE
 RIALTO FEEDER, REPAIRS AT SELECT LOCATIONS, STUDY
 RIALTO PIPELINE - CONSTRUCTION PHASE 1
 RIALTO PIPELINE - CONSTRUCTION PHASE 2
 RIALTO PIPELINE IMPROVEMENTS
 RIALTO PIPELINE IMPROVEMENTS - CONSTRUCTION
 RIALTO PIPELINE IMPROVEMENTS - CONSTRUCTION PHASE III
 RIALTO PIPELINE IMPROVEMENTS - DESIGN PHASE 2
 RIALTO PIPELINE IMPROVEMENTS - DESIGN PHASE 3
 RIALTO PIPELINE IMPROVEMENTS - FINAL DESIGN
 RIALTO PIPELINE IMPROVEMENTS - VALVE PROCUREMENT
 RIALTO PIPELINE IMPROVEMENTS PHASE 1 FINAL DESIGN
 RIALTO PIPELINE PCCP REHABILITATION
 RIALTO PIPELINE REPAIR @ STA 3196+44
 RIALTO PIPELINE REPAIR AT THOMPSON CREEK
 RIALTO PIPELINE REPAIRS AT STATION 3198+44
 RIALTO PIPELINE VALVE PROCUREMENT
 RIGHT OF WAY INFRASTRUCTURE PROTECTION PROGRAM - LOS ANGELES COUNTY REGION
 RIGHT OF WAY INFRASTRUCTURE PROTECTION PROGRAM - O. C. REGION

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Distribution Facilities

RIGHT OF WAY INFRASTRUCTURE PROTECTION PROGRAM - RIVERSIDE AND SAN DIEGO COUNTY REGION
 RIGHT OF WAY INFRASTRUCTURE PROTECTION PROGRAM - WESTERN SAN BERNARDINO COUNTY REGION
 RIGHT OF WAY SURVEY AND MAPPING
 RIO HONDO PRESSURE CONTROL STRUCTURE VALVE REPLACEMENTS
 ROBERT B. DIEMER FILTRATION PLANT - LAND ACQUISITION
 ROOF REPLACEMENT AT SOTO ST. FACILITY
 SAN DIEGO #3 BLOWOFF TO PUMPWELL CONVERSION
 SAN DIEGO CANAL - EAST & WEST BYPASS SCREENING STRUCTURES STUDY
 SAN DIEGO CANAL - ELECTRICAL VAULT & CONDUCTOR REPLACEMENT
 SAN DIEGO CANAL - FENCING
 SAN DIEGO CANAL - INSTALL ACOUSTIC FLOW METER
 SAN DIEGO CANAL - PIEZOMETER
 SAN DIEGO CANAL - REPLACE SODIUM BISULFATE TANK
 SAN DIEGO CANAL - SEEPAGE STUDY
 SAN DIEGO CANAL BISULFITE TANK REPLACEMENT
 SAN DIEGO CANAL LINER REPAIR
 SAN DIEGO CANAL RADIAL GATE (VO-6) REHABILITATION
 SAN DIEGO CANAL RADIAL GATE (VO-8) REHABILITATION
 SAN DIEGO CANAL RADIAL GATE REHAB
 SAN DIEGO CANAL SEEPAGE STUDY
 SAN DIEGO CANAL WEST BYPASS TRASH RACK
 SAN DIEGO PIPELINE #4 VALVE REPLACEMENT
 SAN DIEGO PIPELINE 1 BLOW-OFF VALVE REPLACEMENT
 SAN DIEGO PIPELINE 3 & 5 REMOTE CONTROL OF BYPASS
 SAN DIEGO PIPELINE 4 AND AULD VALLEY PIPELINE CARBON FIBER REPAIRS
 SAN DIEGO PIPELINE 5 & LAKE SKINNER OUTLET REPAIR
 SAN DIEGO PIPELINE 6 - PRESSURE CONTROL STRUCTURE/HYDROELECTRIC PLANT - FEASIBILITY STUDY
 SAN DIEGO PIPELINE 6 NORTH REACH, ENVIRONMENTAL MONITORING DURING CONSTRUCTION
 SAN DIEGO PIPELINE NO. 3 BYPASS
 SAN DIEGO PIPELINE NO. 3 PIPING MODIFICATIONS
 SAN DIEGO PIPELINE NO. 5 - OCT. 2007 FIRE DAMAGE - REPLACE ABOVE GROUND CORROSION CONTROL SYSTEM EQUIPMENT, AND STRUCTURAL
 SAN DIEGO PIPELINE NO. 6 - RIVERSIDE BRANCH - ETIWANDA FACILITY/DROP INLET STRUCTURE
 SAN DIEGO PIPELINE NO. 6 - RIVERSIDE BRANCH - PLEASANT PEAK, COMMUNICATIONS
 SAN DIEGO PIPELINE NO. 6 - RIVERSIDE TUNNEL CONSTRUCTION - AS BUILT
 SAN DIEGO PIPELINE NO. 6 - RIVERSIDE TUNNEL COST OF RIGHT OF WAY (OPTIONAL PORTAL SITE)
 SAN DIEGO PIPELINE NO. 6 - RIVERSIDE TUNNEL ENVIRONMENTAL CONSTRUCTION
 SAN DIEGO PIPELINE NO. 6 - RIVERSIDE TUNNEL ENVIRONMENTAL PRELIMINARY DESIGN
 SAN DIEGO PIPELINE NO. 6 - RIVERSIDE TUNNEL PRELIMINARY DESIGN
 SAN DIEGO PIPELINE NO. 6 - RIVERSIDE TUNNEL PROGRAM MANAGEMENT
 SAN DIEGO PIPELINE NO. 6 - RIVERSIDE TUNNEL RIGHT OF WAY PRELIMINARY DESIGN
 SAN DIEGO PIPELINE NO. 6 - CONTRACT NO.1 SAN DIEGO CANAL TO MOUNT OLYMPUS
 SAN DIEGO PIPELINE NO. 6 - CONTRACT NO.2 MOUNT OLYMPUS TUNNEL & PORTALS
 SAN DIEGO PIPELINE NO. 6 - NORTH REACH CONSTRUCTION - AS BUILT
 SAN DIEGO PIPELINE NO. 6 - NORTH REACH ENVIRONMENTAL - CONSTRUCTION
 SAN DIEGO PIPELINE NO. 6 - NORTH REACH ENVIRONMENTAL PRELIMINARY DESIGN
 SAN DIEGO PIPELINE NO. 6 - NORTH REACH FINAL DESIGN & ADV/NTP
 SAN DIEGO PIPELINE NO. 6 - NORTH REACH POST DESIGN
 SAN DIEGO PIPELINE NO. 6 - NORTH REACH PRELIMINARY DESIGN
 SAN DIEGO PIPELINE NO. 6 - NORTH REACH PROGRAM MANAGEMENT - CONSTRUCTION
 SAN DIEGO PIPELINE NO. 6 - NORTH REACH PROGRAM MANAGEMENT - DESIGN
 SAN DIEGO PIPELINE NO. 6 - NORTH REACH RIGHT OF WAY FINAL DESIGN
 SAN DIEGO PIPELINE NO. 6 - NORTH REACH RIGHT OF WAY PRELIMINARY DESIGN
 SAN DIEGO PIPELINE NO. 6 - NORTHERN PIPELINE COST OF RIGHT OF WAY
 SAN DIEGO PIPELINE NO. 6 - NORTHERN REACH ENVIRONMENTAL FINAL DESIGN
 SAN DIEGO PIPELINE NO. 6 - OPERATIONS SCOPING STUDY
 SAN DIEGO PIPELINE NO. 6 - PIPELINE/TUNNEL STUDY - DESIGN
 SAN DIEGO PIPELINE NO. 6 - PIPELINE/TUNNEL STUDY - ENVIRONMENTAL
 SAN DIEGO PIPELINE NO. 6 - PIPELINE/TUNNEL STUDY - PROJECT MANAGEMENT
 SAN DIEGO PIPELINE NO. 6 - PIPELINE/TUNNEL STUDY - RIGHT OF WAY
 SAN DIEGO PIPELINE NO. 6 - PROJECT MANAGEMENT
 SAN DIEGO PIPELINE NO. 6 - RIGHT OF WAY
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH - PROGRAM MANAGEMENT
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH / TUNNEL STUDY
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH CONSTRUCTION / AS BUILT
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH COST OF RIGHT OF WAY
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH ENVIRONMENTAL - CONSTRUCTION
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH ENVIRONMENTAL FINAL DESIGN
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH ENVIRONMENTAL PRELIMINARY DESIGN
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH FINAL DESIGN/ADV
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH PRELIMINARY DESIGN
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH RIGHT OF WAY FINAL DESIGN
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH RIGHT OF WAY PRELIMINARY DESIGN
 SAN DIEGO PIPELINE NO. 6 - SOUTH REACH TUNNEL ALIGNMENT ANALYSIS
 SAN DIEGO PIPELINE NO. 6 AREA STUDY
 SAN DIEGO PIPELINE NO. 6 ENVIRONMENTAL MITIGATION
 SAN DIEGO PIPELINE NO.4 & AULD VALLEY PIPELINE CARBON FIBER REPAIR STUDY

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Distribution Facilities

SAN DIEGO PIPELINE NOS. 1AND 3 - VALVE REPLACEMENT
 SAN DIMAS AND RED MOUNTAIN POWER PLANTS STANDBY DIESEL ENGINE GENERATOR REPLACEMENTS
 SAN DIMAS CONTROL STRUCTURE 500 GALLONS DIESEL TANK REPLACEMENT
 SAN DIMAS HEP BATTERY BANK AND GENERATOR BREAKER
 SAN DIMAS PCS - UNINTERRUPTIBLE POWER SOURCE SYSTEMS INSTALLATION
 SAN FRANCISQUITO PIPELINE BLOW OFF STRUCTURE, STA 287+70, ACCESS ROAD CONSTRUCTION
 SAN GABRIEL TOWER SEISMIC UPGRADE
 SAN GABRIEL TOWER SLIDE GATE REHABILITATION
 SAN JACINTO #1 AND #2 CASA LOMA FAULT CROSSING STRUCTURE UPGRADE
 SAN JACINTO DIVERSION STRUCTURE SLIDE GATE V-03 REPLACEMENT
 SAN JOAQUIN RELIEF STRUCTURE FOR EASTERN ORANGE COUNTY FEEDER #2
 SAN JOAQUIN RELIEF STRUCTURE FOR EASTR OC FDR #2
 SAN JOAQUIN RESERVOIR, INSTALL BULKHEAD
 SANTA ANA RIVER BRIDGE EXPANSION JOINT REPLACEMENT
 SANTA ANA RIVER BRIDGE SEISMIC RETROFIT
 SANTA ANA RIVER BRIDGE SEISMIC UPGRADE
 SANTA MONICA FEEDER RELOCATION
 SANTA MONICA FEEDER STATION 495+10 REHABILITATION
 SANTIAGO CONTROL TOWER CATHODIC PROTECTION
 SANTIAGO LATERAL REPLACE MOTOR - OPERATED VALVE
 SANTIAGO LATERAL SECTIONALIZATION VALVE REPLACEMENT
 SANTIAGO LATERAL STA 216+40 BUTTERFLY VALVE REPLACEMENT
 SANTIAGO PRESSURE CONTROL STRUCTURE
 SANTIAGO TOWER ACCESS ROAD IMPROVEMENT
 SCADA COMMUNICATIONS MPLS UPGRADE - AT&T REGION (MINOR CAP)
 SCADA COMMUNICATIONS MPLS UPGRADE - VERIZON REGION (MINOR CAP)
 SCADA SYSTEM HARDWARE UPGRADE
 SCADA SYSTEM NT SOFTWARE UPGRADE
 SCADA SYSTEM SUPPORT PROGRAMS
 SD AND CASA LOMA CANALS LINING
 SD CANAL EAST & WEST BYPASS SCREENING STRUCTURES STUDY
 SD CANAL REPLACE SODIUM BISULFITE TANK
 SD PIPELINE 3 CULVERT ROAD REHAB
 SD PIPELINE 3,4, AND 5 PROTECTIVE COVER
 SD PIPELINE 4 EXPLORATORY EXCAVATION
 SD PIPELINE 5 EXPLORATORY EXCAVATION
 SD PIPELINES 3 AND 5 REMOTE CONTROL BYPASS STRUCTURE GATES AND ISOLATION VALVES
 SECOND LOWER & SEPULVEDA FEEDERS SCI DRAIN STATIONS
 SECOND LOWER CROSS FEEDER - VALVE PROCUREMENT
 SECOND LOWER CROSS FEEDER CONSTRUCTION
 SECOND LOWER CROSS FEEDER FINAL DESIGN
 SECOND LOWER FEEDER - INSTALL LINER
 SECOND LOWER FEEDER CATHODIC PROTECTION SYSTEM
 SECOND LOWER FEEDER CURRENT MITIGATION REFURBISHMENT
 SECOND LOWER FEEDER PCCP REHABILITATION
 SECOND LOWER FEEDER PCCP REHABILITATION - PHASE I: PIPE PROCUREMENT
 SECOND LOWER FEEDER PCCP REHABILITATION - PHASE I: PRELIMINARY DESIGN
 SECOND LOWER FEEDER PCCP REHABILITATION - PHASE I: REACH 1
 SECOND LOWER FEEDER PCCP REHABILITATION - PHASE I: REACH 2
 SECOND LOWER FEEDER PCCP REHABILITATION - PHASE I: REACH 3
 SECOND LOWER FEEDER PCCP REHABILITATION - PHASE I: REACH 4
 SECOND LOWER FEEDER PCCP REHABILITATION - PHASE I: REACH 5
 SECOND LOWER FEEDER PCCP REHABILITATION - PHASE I: REACH 6
 SECOND LOWER FEEDER PCCP REHABILITATION - PHASE I: ROW ACQUISITION
 SECOND LOWER FEEDER PCCP REHABILITATION - PHASE I: VALVE PROCUREMENT
 SECOND LOWER FEEDER PCCP REPAIRS
 SECOND LOWER FEEDER RELIABILITY AT 3 LOCATIONS - SEISMIC STUDY
 SEISMIC UPGRADE OF 11 FACILITIES ON THE ALLEN MCCOLLOCH PIPELINE
 SEISMIC UPGRADES AT 10 SERVICE CONNECTION STRUCTURES ALONG AMP
 SELECTED PRESSURE REPLACE VALVE POSITION INDICATORS
 SEPULVEDA CANYON CONTROL FACILITY BYPASS PROJECT
 SEPULVEDA CANYON CONTROL FACILITY WATER STORAGE TANKS SEISMIC UPGRADE
 SEPULVEDA CANYON POWER PLANT TAIL RACE COATINGS
 SEPULVEDA CANYON TANKS EXTERIOR AND INTERIOR RECOATING
 SEPULVEDA FEEDER - CARBON FIBER LINER REPAIRS
 SEPULVEDA FEEDER CATHODIC PROTECTION SYSTEM
 SEPULVEDA FEEDER CORROSION/INTERFERENCE MITIGATION, STATION 950+00 TO 1170+00
 SEPULVEDA FEEDER HEP AUTO PILOT
 SEPULVEDA FEEDER REPAIRS AT 3 SITES
 SEPULVEDA FEEDER SOUTH CATHODIC PROTECTION SYSTEM
 SEPULVEDA FEEDER STATION 2002+02 TO 2273+28 STRAY CURRENT INTERFERENCE MITIGATION
 SEPULVEDA FEEDER STRAY CURRENT MITIGATION REFURBISHMENT
 SEPULVEDA PCS - PERIMETER ASPHALT REPAIRS
 SEPULVEDA PIPELINE PCCP REHABILITATION
 SEPULVEDA-WEST BASIN INTERCONNECTION VALVE REPLACEMENTS
 SERVICE CONNECTION LV-01 UPGRADES

TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS

Description

Distribution Facilities

SERVICE CONNECTION OC-26 - RELOCATION OF METER CABINET, INSTRUMENT HOUSING & AIR VENT STACK
 SERVICE CONNECTIONS CB-12 & CB-16 TURNOUT VALVE REPLACEMENT & ELECTRICAL UPGRADE
 SIMULATION AND MODELING APPLICATION FOR REAL TIME OPERATIONS SMART OPS
 SITE 3 SECOND LOWER FEEDER URGENT REPAIRS - FINAL DESIGN
 SITES 1 & 2 SECOND LOWER FEEDER URGENT REPAIRS - FINAL DESIGN & PIPE FABRICATION
 SKINNER BRANCH - AIR INJECTION MODIFICATIONS TO RED MOUNTAIN POWER PLANT
 SKINNER BRANCH - CASA LOMA CANAL
 SKINNER BRANCH - CASA LOMA SIPHON BARREL ONE
 SKINNER BRANCH - CATWALK FOR TRAVELING MAINTENANCE BRIDGE FOR
 SKINNER BRANCH - FABRICATE & REPLACE THE STEMS, NUTS & KEYS
 SKINNER BRANCH - REPAIR MODULE 1 AND 2 FLOCCULATORS BRIDGES
 SKINNER DAM REMEDIATION
 SKINNER DISTRIBUTION SYSTEM - CONTRACT # 1396
 SKINNER ELECTRICAL BUILDING HVAC UPGRADE
 SKINNER FACILITY AREA PAVING
 SKINNER FILTRATION PLANT - ELEVATED SLAB IN SERVICE BLDG 1
 SKINNER HELIPAD REHAB
 SKINNER REPLACEMENT FOR WETCELL BATTERY AND INVERTER
 SKINNER SCADA SERVERS RELOCATION
 SMART-OPS (FORMERLY RTOS)
 SOTO STREET FACILITY - BUILDING SEISMIC UPGRADE
 SOTO STREET FACILITY - REPLACE HEATING
 SOTO STREET FACILITY - ROOF REPLACEMENT
 SOUTH COUNTY PIPELINE PROTECTION AT SAN JUAN CREEK CROSSING
 SOUTH REACH / TUNNEL STUDY
 SOUTH REACH CONSTRUCTION/ASBUILT - FUTURE UNAPPROPRIATED
 SOUTH REACH DESIGN - FUTURE/UNAPPROPRIATED
 SOUTH REACH ENVIRONMENTAL - FUTURE/UNAPPROPRIATED
 SOUTH REACH FEASIBILITY STUDY
 SOUTH REACH PROJECT MANAGEMENT - FUTURE/UNAPPROPRIATED
 SOUTH REACH RIGHT OF WAY - FUTURE/UNAPPROPRIATED
 SPECIAL SERVICE BRANCH - REPLACE PLATE BENDING
 ST. JOHN'S CANYON CHANNEL EROSION MITIGATION
 SYSTEM RELIABILITY PROGRAM
 SYSTEM-WIDE ASPHALT REPLACEMENT
 TEMESCAL POWER PLANT REPLACE EMERGENCY GENERATOR
 TREATED WATER CROSS CONNECTION PREVENTION - FINAL DESIGN & CONSTRUCTION
 TREATED WATER CROSS CONNECTION PREVENTION - UNFUNDED WORK
 TWO-WAY RADIO ENHANCEMENT - EMERGENCY SERVICES, FIRE CONTROL, EVACUATION & BLDG. MAINT.
 TWO-WAY RADIO ENHANCEMENT FOR EMERGENCY SERVICES, FIRE CONTROL, EVACUATION AND BLDG. MAINTENANCE
 UNDER GROUND STORAGE TANK DISPENSER SPILL CONTAINMENT & REMEDIATION
 UNION STATION TWO-WAY RADIO ENHANCEMENT FOR EMERGENCY SERVICES, FIRE CONTROL, EVACUATION AND BUILDING MAINTENANCE
 UPGRADE CATHODIC PROTECTION RECTIFIERS
 UPGRADE HOLLYWOOD TUNNEL PORTAL SLEEVE VALVE EQUIPMENT
 UPGRADE SUNSET GARAGE
 UPPER FEEDER - SANTA ANA RIVER BRIDGE REPAIRS
 UPPER FEEDER - STRUCTURAL PROTECTION
 UPPER FEEDER AIR ENTRAINMENT
 UPPER FEEDER CATHODIC PROTECTION SYSTEM
 UPPER FEEDER GATE REHABILITATION
 UPPER FEEDER JUNCTION STRUCTURE SEISMIC UPGRADE
 UPPER FEEDER SANTA ANA RIVER DISCHARGE PAD
 UPPER FEEDER SERVICE CONNECTIONS UPGRADES
 UPPER NEWPORT BAY BLOW-OFF STRUCTURE REHABILITATION
 UPS SYSTEMS INSTALLATION AT FOOTHILL PCS
 UPS SYSTEMS INSTALLATION AT PERRIS CONTROL STRUCTURE
 UTILITY BUSINESS ARCHITECTURE (OBJECT MAPPING/MODELING)
 VACUUM AIR RELEASE VALVE RELOCATION PILOT PROGRAM
 VALLEY & LOS ANGELES DISTRIBUTION VALVE POSITION DISPLAY UPGRADE
 VALVE PROCUREMENT
 VIDEO CONFERENCE SYSTEM UPGRADE
 VIDEOCONFERENCING UPGRADE
 WADSWORTH PUMPING PLANT - MODIFICATION/REPAIRS OF FIFTY-NINE 6.9KV BREAKERS/CABINETS
 WADSWORTH PUMPING PLANT CONDUIT REPAIR AND PROTECTION
 WADSWORTH PUMPING PLANT CONTROL & PROTECTION UPGRADES
 WADSWORTH PUMPING PLANT FOREBAY GANTRY CRANE UPGRADE
 WADSWORTH PUMPING PLANT RECOATING 144" YARD PIPING
 WADSWORTH PUMPING PLANT STOP LOGS ADDITION - STUDY
 WATER DELIVERY SYSTEM AUTOMATION
 WATER PLANNING APPLICATION
 WATER QUALITY - REMOTE MONITORING
 WATER QUALITY LABORATORY BUILDING EXPANSION
 WATER QUALITY MONITORING AND EVENT DETECTION SYSTEM
 WEST COAST FEEDER - CATHODIC PROTECTION SYSTEMS
 WEST OC FEEDER VALVE REPLACEMENT
 WEST ORANGE COUNTY FEEDER OC-09 REHABILITATION

**TABLE 3
CONVEYANCE, DISTRIBUTION, AND STORAGE SYSTEM COSTS**

Description

Distribution Facilities

WEST ORANGE COUNTY FEEDER VALVE REPLACEMENT
 WEST VALLEY AREA STUDY
 WEST VALLEY FEEDER # 1 STAGE 2 VALVE STRUCTURE MODIFICATIONS - CONSTRUCTION
 WEST VALLEY FEEDER NO. 1 ACCESS ROADS AND STRUCTURE IMPROVEMENTS (STAGE 3)
 WEST VALLEY FEEDER NO. 1 ACCESS ROADS AND STRUCTURES IMPROVEMENTS
 WEST VALLEY FEEDER NO. 1 VALVE STRUCTURE MODIFICATIONS
 WESTERN REGION PLUMBING RETROFIT
 WEYM. PLT/LA VERNE FAC-BACKFLO PREV ASSY
 WEYMOUTH - BUILDING NO. 4 - HAND RAIL AND STAIRS ADDITION
 WEYMOUTH - FLAG POLE AREA LANDSCAPE UPGRADE
 WEYMOUTH ASPHALT REHABILITATION
 WEYMOUTH COMPRESSED AIR SYSTEM
 WEYMOUTH DISTRIBUTION SYSTEM - REPLACEMENT OF AREA CONTROL SYSTEMS - CONTRACT #1396
 WFP - ASPHALT REHABILITATION
 WFP - COMPRESSED AIR SYSTEM IMPROVEMENT
 WFP - PURCHASE OF REAL PROPERTY
 WFP - REPAIR TO BLDG # 1
 YORBA LINDA FEEDER - STA 924+11 PORTAL ACCESS
 YORBA LINDA FEEDER BYPASS
 YORBA LINDA PORTAL STRUCTURE ACCESS/TELEGRAPH CREEK BRIDGE

Sub-total Distribution facilities costs

\$70,409,322

TABLE 4

**FISCAL YEAR 2020/21
ESTIMATED READINESS-TO-SERVE CHARGE REVENUE**

| Member Agency | Rolling Ten-Year Average Firm Deliveries (Acre-Feet) FY2008/09 - FY2017/18 | RTS Share | 6 months @ \$136 million per year (7/20-12/20) | Rolling Ten-Year Average Firm Deliveries (Acre-Feet) FY2009/10 - FY2018/19 | RTS Share | 6 months @ \$130 million per year (1/21-6/21) | Total RTS Charge FY 2020/21 |
|---|--|----------------|--|--|----------------|---|-----------------------------|
| Anaheim | 18,484.7 | 1.19% | 808,227 | 17,327.0 | 1.17% | 763,281 | 1,571,508 |
| Beverly Hills | 10,636.8 | 0.68% | 465,085 | 10,447.3 | 0.71% | 460,220 | 925,304 |
| Burbank | 12,505.3 | 0.80% | 546,783 | 12,323.6 | 0.84% | 542,874 | 1,089,657 |
| Calleguas MWD | 100,327.3 | 6.45% | 4,386,723 | 97,187.9 | 6.59% | 4,281,277 | 8,668,000 |
| Central Basin MWD | 45,375.1 | 2.92% | 1,983,986 | 42,103.2 | 2.85% | 1,854,711 | 3,838,697 |
| Compton | 1,052.6 | 0.07% | 46,024 | 779.3 | 0.05% | 34,329 | 80,353 |
| Eastern MWD | 95,589.5 | 6.15% | 4,179,567 | 94,362.5 | 6.40% | 4,156,814 | 8,336,381 |
| Foothill MWD | 8,761.7 | 0.56% | 383,098 | 8,395.4 | 0.57% | 369,830 | 752,928 |
| Fullerton | 8,520.9 | 0.55% | 372,569 | 8,125.5 | 0.55% | 357,941 | 730,510 |
| Glendale | 17,219.1 | 1.11% | 752,890 | 16,548.0 | 1.12% | 728,965 | 1,481,855 |
| Inland Empire Utilities Agency | 58,335.2 | 3.75% | 2,550,655 | 56,560.7 | 3.83% | 2,491,586 | 5,042,242 |
| Las Virgenes MWD | 20,859.4 | 1.34% | 912,059 | 20,448.6 | 1.39% | 900,792 | 1,812,851 |
| Long Beach | 31,074.3 | 2.00% | 1,358,696 | 30,374.2 | 2.06% | 1,338,030 | 2,696,727 |
| Los Angeles | 298,801.6 | 19.21% | 13,064,838 | 269,779.5 | 18.28% | 11,884,203 | 24,949,041 |
| Municipal Water District of Orange County | 214,227.5 | 13.77% | 9,366,909 | 207,817.5 | 14.08% | 9,154,682 | 18,521,591 |
| Pasadena | 19,306.1 | 1.24% | 844,142 | 18,839.6 | 1.28% | 829,913 | 1,674,056 |
| San Diego County Water Authority | 287,538.4 | 18.49% | 12,572,364 | 258,318.0 | 17.51% | 11,379,307 | 23,951,671 |
| San Fernando | 35.7 | 0.00% | 1,561 | 35.6 | 0.00% | 1,568 | 3,129 |
| San Marino | 0.0 | 0.05% | 37,371 | 837.7 | 0.06% | 36,902 | 74,273 |
| Santa Ana | 11,281.3 | 0.73% | 493,265 | 10,780.4 | 0.73% | 474,893 | 968,158 |
| Santa Monica | 6,403.0 | 0.41% | 279,966 | 5,511.2 | 0.37% | 242,777 | 522,742 |
| Three Valleys MWD | 62,968.2 | 4.05% | 2,753,229 | 62,229.1 | 4.22% | 2,741,288 | 5,494,517 |
| Torrance | 16,507.9 | 1.06% | 721,793 | 15,990.2 | 1.08% | 704,393 | 1,426,186 |
| Upper San Gabriel Valley MWD | 22,639.8 | 1.46% | 989,905 | 26,406.0 | 1.79% | 1,163,225 | 2,153,130 |
| West Basin MWD | 116,023.0 | 7.46% | 5,073,004 | 115,327.9 | 7.82% | 5,080,372 | 10,153,376 |
| Western MWD | 69,876.5 | 4.49% | 3,055,289 | 68,688.3 | 4.66% | 3,025,826 | 6,081,114 |
| MWD Total | 1,555,205.6 | 100.00% | \$ 68,000,000 | 1,475,544.2 | 100.00% | \$65,000,000 | \$133,000,000 |
| Totals may not foot due to rounding | | | | | | | |

TABLE 5
FISCAL YEAR 2020/21
ESTIMATED STANDBY CHARGE REVENUE

| Member Agencies | Total Parcel Charge | Number Of Parcels Or Acres | Gross Revenues (Dollars) ¹ |
|--|------------------------------------|---|--|
| Anaheim | \$ 8.55 | 68,630 | \$ 586,789 |
| Beverly Hills | — | — | — |
| Burbank | 14.20 | 29,143 | 413,833 |
| Calleguas MWD | 9.58 | 259,345 | 2,484,527 |
| Central Basin MWD | 10.44 | 340,322 | 3,552,963 |
| Compton | 5.00 | 18,144 | 90,721 |
| Eastern MWD | 6.94 | 401,288 | 2,784,940 |
| Foothill MWD | 10.28 | 30,350 | 311,994 |
| Fullerton | 10.71 | 35,249 | 377,521 |
| Glendale | 12.23 | 45,065 | 551,143 |
| Inland Empire Utilities Agency | 1.76 | 260,763 | 1,979,191 |
| Las Virgenes MWD | 8.03 | 53,527 | 429,823 |
| Long Beach | 12.16 | 92,468 | 1,124,411 |
| Los Angeles | — | — | — |
| Municipal Water District of Orange County ² | 10.09 | 659,398 | 7,497,253 |
| Pasadena | 11.73 | 39,289 | 460,865 |
| San Diego County Water Authority | 11.51 | 1,109,879 | 12,774,707 |
| San Fernando | — | 5,102 | — |
| San Marino | 8.24 | 4,972 | 40,972 |
| Santa Ana | 7.88 | 54,815 | 431,940 |
| Santa Monica | — | — | — |
| Three Valleys MWD | 12.21 | 152,246 | 1,858,926 |
| Torrance | 12.23 | 40,595 | 496,476 |
| Upper San Gabriel Valley MWD | 9.27 | 213,920 | 1,983,041 |
| West Basin MWD | — | — | — |
| Western MWD | 9.23 | 386,901 | 3,571,097 |
| MWD Total | | 4,301,414 | \$ 43,803,133 |

(1) Estimates per FY2019/20 parcel information

(2) Adjusted for inclusion of Coastal MWD

Note: Totals may not foot due to rounding.

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

RESOLUTION 9267

**RESOLUTION OF THE BOARD OF DIRECTORS
OF THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
FIXING AND ADOPTING
A CAPACITY CHARGE
EFFECTIVE JANUARY 1, 2021**

The Board of Directors of The Metropolitan Water District of Southern California (the “Board”) hereby finds that:

1. The Board of The Metropolitan Water District of Southern California (“Metropolitan”), pursuant to Sections 133, 134 and 134.5 of the Metropolitan Water District Act (the “Act”), is authorized to fix such rate or rates for water as will result in revenue which, together with revenue from any water standby or availability of service charge or assessment, will pay the operating expenses of Metropolitan, provide for repairs and maintenance, provide for payment of the purchase price or other charges for property or services or other rights acquired by Metropolitan, and provide for the payment of the interest and principal of its bonded debt; and
2. The amount of revenue to be raised by the Capacity Charge shall be as determined by the Board and allocation of such charges among member agencies shall be in accordance with the method established by the Board; and
3. The Capacity Charge is a charge fixed and adopted by Metropolitan and charged to its member agencies, and is not a fee or charge imposed upon real property or upon persons as an incident of property ownership; and
4. The Capacity Charge is intended to recover the debt service and other appropriately allocated costs to construct, operate and maintain projects needed to meet peak demands on Metropolitan’s distribution system, as shown in the FYs 2020/21 and 2021/22 Cost of Service Report for Proposed Water Rates and Charges (the “2020 Cost of Service Report”); and
5. Pursuant to Resolution 8329, adopted by the Board on July 9, 1991, and Resolution 9199, adopted by the Board on March 8, 2016, and as each is thereafter amended and supplemented, proceeds of the RTS Charge, Capacity Charge, and other revenues from the sale or availability of water are pledged to the payment of Metropolitan’s outstanding revenue bonds and to the payment of Metropolitan’s outstanding subordinate revenue bonds and to revenue bonds and subordinate bonds to be issued pursuant to Resolution 8329 and Resolution 9199; and
6. The Capacity Charge is charged (on a dollar per cubic-foot-per-second basis) to member public agencies (“member agencies”), based upon the amount of capacity used by such member agency that is designed to recover the cost of providing peaking capacity within the distribution system; and

7. In *San Diego County Water Authority v. Metropolitan Water District of Southern California, et al.*, San Francisco Superior Court Case Nos. CPF-16-515282, CPG-17-563350, and CPF-18-516389 (the “2016, 2017, and 2018 Cases”, collectively), the San Diego County Water Authority challenged Metropolitan’s water charges adopted on April 12, 2016, April 11, 2017, and April 10, 2018, respectively, and also challenged Metropolitan’s rates. Metropolitan is defending such challenges; and

8. Metropolitan maintains that its rates and charges are appropriate. There is no final judgment in the identified cases and Metropolitan does not anticipate a final judgement in CY 2021; and

9. On April 14, 2020, the Board considered the rates and charges presented by the General Manager and approved the biennial budget for fiscal years 2020/21 and 2021/22 and adopted recommended water rates for calendar years 2021 and 2022 and charges for calendar year 2021, and received information and documents available at <http://mwdh2o.com/WhoWeAre/Pages/FY-2020-21-and-2021-22-CY-2021-22.aspx> and <http://mwdh2o.com/WhoWeAre/Mission/Pages/review-applicability-of-property-tax-limit.aspx>; and

10. In approving the biennial budget and adopting the rates and charges on April 14, 2020, the Board determined the amount of revenue to be raised by the Capacity Charge in calendar year 2021 to be based on a Capacity Charge in such year of \$10,700 per cubic-foot-per-second, based on information and documents available at <http://mwdh2o.com/WhoWeAre/Pages/FY-2020-21-and-2021-22-CY-2021-22.aspx> and <http://mwdh2o.com/WhoWeAre/Mission/Pages/review-applicability-of-property-tax-limit.aspx>. The amount of the Capacity Charge was updated from the recommendation in the 2020 Cost of Service Report, to reflect modifications made to respond to the COVID-19 pandemic and the effect of PFAS/PFOS will have on certain projections. However, the COS methodology remains the same; and

11. Each of the meetings of the Board were conducted in accordance with the Brown Act (commencing at Section 54950 of the Government Code), for which due notice was provided and at which quorums were present and acting throughout;

NOW, THEREFORE, the Board does hereby resolve, determine and order as follows:

Section 1. That the Board hereby fixes and adopts a Capacity Charge, as described below, to be effective January 1, 2021.

Section 2. That said Capacity Charge shall be in an amount sufficient to provide for payment of the capital financing costs not paid from *ad valorem* property taxes, as well as other appropriately allocated costs, incurred to provide peaking capacity within Metropolitan’s distribution system.

Section 3. That such Capacity Charge effective January 1, 2021, shall be a charge as specified in Section 5 (set in dollars per cubic-foot-per-second of the peak day capacity) for capacity provided to a member agency.

Section 4. That the Capacity Charge specified in Section 5, together with other revenues from Metropolitan’s water rates, other charges, *ad valorem* property taxes, and other miscellaneous revenue, does not exceed the reasonable and necessary cost of providing Metropolitan’s water service for which the rates and charges are made, or conferring the benefit provided, and is fairly apportioned to each member agency in proportion to the peak day capacity utilized by each member agency.

Section 5. That the Capacity Charge shall be a fixed charge as shown in the following table and collected from each member agency monthly, quarterly or semiannually as agreed to by Metropolitan and the member agency.

Table 1. Calendar Year 2021 Capacity Charge

| Calendar Year 2021 Capacity Charge | | | | | |
|---|---|----------------|----------------|----------------|--|
| | Peak Day Demand (cfs) (May 1 through September 30) | | | | Rate (\$/cfs): \$10,700 |
| | Calendar Year | | | | |
| Member Agency | 2017 | 2018 | 2019 | 3-Year Peak | Calendar Year 2021 Capacity Charge |
| Anaheim | 33.0 | 37.2 | 37.1 | 37.2 | \$398,040 |
| Beverly Hills | 25.7 | 27.8 | 23.5 | 27.8 | \$297,460 |
| Burbank | 14.0 | 17.1 | 17.3 | 17.3 | \$185,110 |
| Calleguas | 186.5 | 184.7 | 168.9 | 186.5 | \$1,995,550 |
| Central Basin | 36.7 | 39.2 | 48.6 | 48.6 | \$520,020 |
| Compton | 0.1 | 6.9 | 2.9 | 6.9 | \$73,830 |
| Eastern | 216.6 | 225.1 | 223.3 | 225.1 | \$2,408,570 |
| Foothill | 18.6 | 19.9 | 16.0 | 19.9 | \$212,930 |
| Fullerton | 13.0 | 13.3 | 13.1 | 13.3 | \$142,310 |
| Glendale | 41.4 | 33.5 | 32.2 | 41.4 | \$442,980 |
| Inland Empire | 140.5 | 147.8 | 118.7 | 147.8 | \$1,581,460 |
| Las Virgenes | 44.6 | 45.9 | 39.4 | 45.9 | \$491,130 |
| Long Beach | 55.2 | 80.4 | 51.8 | 80.4 | \$860,280 |
| Los Angeles | 250.4 | 284.6 | 283.2 | 284.6 | \$3,045,220 |
| MWDOC | 418.6 | 442.3 | 263.2 | 442.3 | \$4,732,610 |
| Pasadena | 39.9 | 43.0 | 40.0 | 43.0 | \$460,100 |
| San Diego CWA | 749.7 | 855.5 | 672.0 | 855.5 | \$9,153,850 |
| San Fernando | 0.0 | 0.0 | 0.0 | 0.0 | \$0 |
| San Marino | 7.5 | 4.5 | 2.3 | 7.5 | \$80,250 |
| Santa Ana | 19.9 | 19.3 | 19.4 | 19.9 | \$212,930 |
| Santa Monica | 16.6 | 16.7 | 20.7 | 20.7 | \$221,490 |
| Three Valleys | 126.4 | 142.9 | 128.1 | 142.9 | \$1,529,030 |
| Torrance | 34.0 | 32.6 | 27.8 | 34.0 | \$363,800 |
| Upper San Gabriel | 12.1 | 23.3 | 29.1 | 29.1 | \$311,370 |
| West Basin | 201.7 | 202.4 | 211.8 | 211.8 | \$2,266,260 |
| Western MWD | 175.2 | 194.7 | 170.5 | 194.7 | \$2,083,290 |
| Total | 2,877.9 | 3,140.6 | 2,660.9 | 3,184.1 | \$34,069,870 |

Section 6. That the Capacity Charge for each member agency, the method of its calculation, cost allocations and other data used in its determination are as specified in the adopted rates and charges to be effective January 1, 2021, which forms the basis of the Capacity Charge, and the corresponding 2020 Cost of Service Report. The adopted rates and charges and cost of service reports are on file and available for review by interested parties at Metropolitan’s headquarters.

Section 7. That the General Manager and the General Counsel are hereby authorized to do all things necessary and desirable to accomplish the purposes of this Resolution, including, without limitation, the commencement or defense of litigation.

Section 8. That if any provision of this Resolution or the application to any member agency, property or person whatsoever is held invalid, that invalidity shall not affect other provisions or applications of this Resolution which can be given effect without the invalid portion or application, and to that end the provisions of this Resolution are severable.

Section 9. That the General Manager is hereby authorized and directed to take all necessary action to satisfy relevant statutes requiring notice by publication.

Section 10. That the Board Executive Secretary is hereby directed to transmit a certified copy of this Resolution to the presiding officer of the governing body of each member agency.

I HEREBY CERTIFY that the foregoing is a full, true and correct copy of a Resolution adopted by the Board of Directors of The Metropolitan Water District of Southern California, at its meeting held on April 14, 2020.



Secretary of the Board of Directors
of The Metropolitan Water District
of Southern California

THE METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

RESOLUTION 9268

**RESOLUTION OF THE BOARD OF DIRECTORS
OF THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA**

**FINDING THAT FOR FISCAL YEARS 2020/21 AND 2021/22, THE AD VALOREM
PROPERTY TAX RATE LIMITATION IN SECTION 124.5 OF THE METROPOLITAN
WATER DISTRICT ACT IS NOT APPLICABLE BECAUSE IT IS ESSENTIAL TO
METROPOLITAN'S FISCAL INTEGRITY TO COLLECT AD VALOREM PROPERTY
TAXES IN EXCESS OF THAT LIMITATION**

The Board of Directors of The Metropolitan Water District of Southern California (the "Board") hereby finds that:

1. The Metropolitan Water District of Southern California ("Metropolitan"), pursuant to Section 124 of the Metropolitan Water District Act (the "Act"), is authorized to levy and collect taxes on all property within the district for the purposes of carrying on the operations and paying the obligations of the district; and

2. Pursuant to Section 307 of the Act, the Board of Directors ("Board") determines the amount of money necessary to be raised by taxation for district purposes each fiscal year and fixes rates of taxation upon the assessed valuation of property taxable by the district to be levied accordingly; and

3. Since its inception Metropolitan has levied and collected property taxes; and

4. The Board, pursuant to sections 133 and 134 of the Act, is authorized to fix the rate or rates at which water shall be sold. Such rates, so far as practicable, shall result in revenue which, together with revenue from fixed charges or assessments, will pay Metropolitan's operating expenses, capital costs, debt service and other expenses and obligations; and

5. Before 1942, all revenues to pay for operations, construction of the Colorado River Aqueduct, other facilities, and other Metropolitan obligations came from ad valorem property taxes. After deliveries of Metropolitan water began in fiscal year 1941/42, water sales were an additional source of revenues, but not until 1974 did revenues from water sales equal revenues from ad valorem taxes; and

6. On November 4, 1960, Metropolitan entered into its contract with the California Department of Water Resources (the "State Water Contract") for water service from the State Water Project. Metropolitan's was the first contract executed and the prototype for the 28 state water contracts that followed; its terms were validated by the California Supreme Court in *Metropolitan Water Dist. v. Marquardt* (1963) 59 Cal.2d 159; and

7. Under the State Water Contract, Metropolitan is obligated to pay allocable portions of the cost of construction and replacement of the State Water Project system, as well as ongoing operating and maintenance costs, regardless of quantities of water delivered to Metropolitan and regardless of the

amounts of water Metropolitan delivers to its member agencies. Approximately 70 percent of Metropolitan's State Water Contract obligations are fixed, or unrelated to the quantity of water delivered; and

8. Metropolitan's authority to levy a tax or assessment to satisfy State Water Contract obligations was a condition to entering into the State Water Contract, and the California Department of Water Resources only executed state water contracts with agencies that have taxing power; and

9. The State Water Contract expressly provides that, if other available funds are not sufficient, Metropolitan must levy a tax or assessment to satisfy its State Water Contract obligations; and

10. Metropolitan's outstanding general obligation bonds and State Water Contract obligations are indebtedness approved by the California voters before Article XIII A of the California Constitution (Proposition 13) was adopted; and

11. Metropolitan's revenues from water transactions and deliveries vary with the quantity of water delivered and water deliveries fluctuate significantly with drought, weather conditions, availability of local supplies, economic conditions and other factors affecting regional demands. During the period from fiscal year 2008/09 through fiscal year 2018/19, Metropolitan's annual deliveries ranged from 1.4 million acre-feet to 2.2 million acre-feet; and

12. When fixing taxes and setting rates, the Board and Metropolitan's member agencies evaluate the appropriate mix of property taxes and water rates and charges to promote Metropolitan's fiscal stability and ensure its ability to satisfy the region's long-term water supply needs while reasonably and fairly allocating the cost of providing service to its member agencies and complying with legal requirements; and

13. On May 8, 1984, the Board approved recommendations to amend the Act, set forth in Board Letter 6-2 dated April 30, 1984; and

14. Such amendments were incorporated into Assembly Bill 1445, which was approved by the Legislature and filed with the California Secretary of State on July 3, 1984, and added to the Act as Section 124.5; and

15. Section 124.5 provides that Metropolitan must limit the ad valorem property tax to collect no more than the amount required to pay for a fraction of voter-approved debt, specifically, the composite amount required to pay (1) the principal and interest on general obligation bonded indebtedness of the district and (2) that portion of the district's payment obligation under a water service contract with the state which is reasonably allocable, as determined by Metropolitan, to the payment by the state of principal and interest on bonds issued pursuant to the California Water Resources Development Bond Act as of the effective date of this section and used to finance construction of facilities for the benefit of the district; and

16. Section 124.5 further provides that its restrictions do not apply "if the board of directors of the district, following a hearing held to consider that issue, finds that a tax in excess of these restrictions is essential to the fiscal integrity of the district, and written notice of the hearing is filed with the offices of the Speaker of the Assembly and the President pro Tempore of the Senate at least 10 days prior to that date of the hearing;" and

17. Section 124.5's rate restriction became effective in fiscal year 1990/91; and

18. In fiscal years 1990/91 through 1999/2000, the Board maintained Metropolitan's tax levy rate at .0089 percent, a rate that was below the rate then permitted under the restriction clause of Section 124.5; and

19. Metropolitan's tax levy rate has declined from .0089 percent in fiscal year 1999/2000 to .0035 percent in fiscal year 2012/13, and the Board has made the necessary finding since fiscal year 2013/14 that it is essential to fiscal integrity to collect more property taxes than the limits set forth in Section 124.5; and

20. On January 31, 2020, the General Manager presented to the Board a proposed biennial budget for fiscal years 2020/21 and 2021/22, proposed rates for calendar years 2021 and 2022, and proposed charges for 2021, that were based on the proposal that Metropolitan maintain its current ad valorem property tax rate of 0.0035 to maintain fiscal integrity; and

21. On March 6, 2020, the General Manager provided an information letter to the Board reviewing the applicability of Section 124.5 for fiscal years 2020/21 and 2021/22; and

22. On March 10, 2020, the Board held a public hearing with advance notice as required by Section 124.5, to consider the recommendation to suspend the tax restriction clause of Section 124.5 for to give interested parties the opportunity to present their views regarding the recommendation that it is essential to fiscal integrity to collect more property taxes in fiscal years 2020/21 and 2021/22 than the limits of Section 124.5; and

23. Metropolitan currently utilizes tax revenues solely to pay debt service on its general obligation bonds, approved by the voters in 1966 and presently outstanding in the amount of \$48,050,000 as of December 31, 2019, and a portion of its State Water Contract obligations capital costs; and

24. Metropolitan provides, sells and delivers a reliable water supply at wholesale to its member agencies throughout a broad service area, and its integrated water system is able to deliver water throughout its service area; and

25. Metropolitan's participation in the State Water Project under the State Water Contract is fundamental to Metropolitan's ability to consistently provide a reliable water supply and delivery at wholesale to its service area and, thus, satisfaction of its State Water Contract obligations is essential to Metropolitan's mission; and

26. The State Water Project facilities are over 50 years old and Metropolitan's State Water Contract obligations include increasing costs for repair and replacement of existing facilities that are needed to both maintain the storage and conveyance capacity of the State Water Project facilities and assure continued availability and delivery of supplies from the State Water Project and other sources. These costs and obligations were not foreseen by the Legislature when, in 1984, it established the Section 124.5 tax rate restriction and nothing suggests that the Legislature intended to prohibit the Board from considering such circumstances when deciding whether collecting more than the limitation in that Section is essential to Metropolitan's fiscal integrity; and

27. Metropolitan's State Water Contract obligations also include substantial construction, replacement, operation, and maintenance costs for endangered species protection and conservation measures, consistent with state and federal mandates. These obligations must be undertaken to ensure the reliability of the State Water Project, to address ecosystem needs, and to secure long-term operating

permits consistent with the federal and state endangered species acts. These costs and obligations were not foreseen or considered by the Legislature when, in 1984, it established the Section 124.5 rate restriction and nothing suggests that the Legislature intended to prohibit the Board from considering such circumstances when deciding whether collecting more than the limitation in that Section is essential to Metropolitan's fiscal integrity; and

28. Consideration of, and providing for, current and anticipated State Water Contract obligations is essential to Metropolitan's fiscal stability and integrity; and

29. Availability of diverse financial resources to satisfy Metropolitan's State Water Contract obligations is essential to Metropolitan's fiscal stability and integrity; and

30. An appropriate balance of fixed costs and fixed revenue is essential to Metropolitan's long-term fiscal health; and

31. The ad valorem tax is essential to the appropriate balance of fixed costs and fixed revenue under current circumstances; and

32. Continuing an ad valorem property tax rate at the current rate will allow the Board flexibility to fund Metropolitan's State Water Contract obligations fully and fairly in fiscal year 2020/21 and 2021/22 and for the foreseeable future; and

33. When it enacted Section 124.5, the Legislature recognized the importance of robust fixed revenue sources. At the same time that it established the rate restriction and safety valve to make the restriction inapplicable, it authorized alternative fixed revenue sources in the form of benefit assessments and standby charges. To the extent such assessments or charges would be new assessments or charges, they would likely be governed by additional requirements not in place or contemplated when the Legislature enacted Section 124.5. In the Board's judgment, adoption of such new or additional assessments or charges is not practical and they are not practical fixed revenue sources at this time, especially because those assessments and charges would be collected from property owners already paying the ad valorem property taxes; and

34. In FY 2020/21, approximately 84 percent of Metropolitan's estimated costs are fixed, while approximately 17 percent of Metropolitan's revenues are from fixed sources, including ad valorem property taxes, readiness-to-serve and capacity charges; in FY 2021/22, approximately 83 percent of Metropolitan's estimated costs are fixed, while approximately 17 percent of Metropolitan's revenues are from fixed sources, including ad valorem property taxes, readiness-to-serve and capacity charges. Collecting more than the Section 124.5 rate limitation will allow Metropolitan to sustain ad valorem property tax revenues at 8 percent of overall revenues in fiscal year 2020/21 and 8 percent in fiscal year 2021/22 and at an estimated 6 percent of overall revenues in fiscal year 2029/30. If Section 124.5 limitations were applied, it is anticipated that, in fiscal years 2020/21 and 2021/22, ad valorem property tax revenue would drop to approximately 0.8 percent and 0.6 percent of overall revenue and, by fiscal year 2029/30, it would be only 0.1 percent of overall revenue; and

35. Absent maintenance of the tax rate or other changes, fiscal years 2020/21 and 2021/22 fixed revenues as a percentage of total revenues will decline from 17 percent to 10 percent; fixed revenues as a percentage of total revenues will decline from 15 percent to 9 percent in fiscal year 2029/30; and this trend will continue; and

36. In light of Metropolitan's significant fixed costs and fluctuating volumetric revenues, robust and diverse fixed revenues are essential to Metropolitan's fiscal well-being for the additional

reason that they help Metropolitan maintain creditworthiness. Positive credit ratings are central to fiscal integrity because they reduce the cost of borrowing and provide flexibility by increasing access to credit markets. Access to credit markets is especially important whenever Metropolitan faces supply or demand uncertainties. As set forth above, collecting more tax revenue than the tax rate restriction will allow Metropolitan to retain important fixed revenues; and

37. Ad valorem taxes are an important component of Metropolitan's fiscal integrity because they help ensure that those for whom costs are incurred help pay those costs. As a wholesale water agency, Metropolitan's customers are its 26 member agencies. Each member agency pays volumetric rates based on the amount of water transactions with Metropolitan; whereas ad valorem taxes are levied directly on residents and businesses that are property owners within Metropolitan's service area. All property owners within Metropolitan's service area benefit from the water system that allows water to be delivered in Southern California. Ad valorem taxes ensure that residences and businesses pay a share of costs of the system; and

38. Maintaining the existing ad valorem tax rate advances fiscal integrity because it takes pressure off Metropolitan's volumetric water rates and readiness-to-serve and capacity charges and assist the Board, in its discretion, in maintaining a fair and appropriate balance between fixed costs and fixed revenues and help ensure that all who benefit from Metropolitan's service pay a fair share of the cost of that service; and

39. Maintaining the existing ad valorem tax rate and preventing the decline in fixed revenues will create a more stable water revenue structure that can better deal with fluctuations in water transactions and support drought response measures; and

40. Metropolitan's reliance on property taxes is significantly lower than most other agencies that entered into state water contracts. Other state water contractors rely on property taxes to cover up to 100 percent of their state water contract obligations. Even if all Metropolitan's property tax revenue were fully allocated to State Water Contract obligations- and it is not, as a portion covers Metropolitan's general obligation debt service-Metropolitan would cover only 23 percent of its fiscal years 2020/21 and 22 percent of its fiscal year 2021/22 State Water Contract obligations. This percentage is at the far low end for state water contractors; and

41. An analysis of fiscal health and stability must consider long-term circumstances, and the full spectrum of facts and circumstances, including the appropriate mix of property taxes and water rates and charges that will best allow Metropolitan to satisfy the region's long-term water supply needs; and

42. Notices of a public hearing were filed with the offices of the Speaker of the Assembly and the President pro Tempore of the Senate on February 24, 2020; and

43. The Board conducted a public hearing at its regular meeting on March 10, 2020, at which interested parties were given the opportunity to present their views regarding the recommendation that it is essential to Metropolitan's fiscal integrity to collect taxes in excess of the Section 124.5 to limitation to maintain the ad valorem tax at current levels for fiscal years 2020/21 and 2021/22; and

44. The Board has carefully considered the comments and evidence and all material factors relevant to the finding, and all such materials were made available at <http://mwdh2o.com/WhoWeAre/Mission/Pages/review-applicability-of-property-tax-limit.aspx>; and

45. The meeting of the Board was conducted in accordance with the Brown Act (commencing at Section 54950 of the Government Code), for which due notice was provided and at

which a quorum was present and acting throughout;

NOW, THEREFORE, the Board of Directors of The Metropolitan Water District of Southern California, after receiving, considering, and evaluating public comments and evidence and all material factors pertaining thereto, including the financial and operating information summarized in Board Letter 9-2 and presented on March 10, 2020, and in recognition of the facts and considerations set forth in this Resolution, hereby:

1. Finds and determines that it is essential to Metropolitan's fiscal integrity to collect ad valorem property taxes in excess of the Section 124.5 limitation on ad valorem property taxes in fiscal years 2020/21 and 2021/22; and
2. Resolves and determines that pursuant to its finding, the tax rate restriction in Section 124.5 of the Act is inapplicable when setting the ad valorem property tax rate for fiscal years 2020/21 and 2021/22, allowing the Board to maintain the current ad valorem property tax rate for those fiscal years (.0035 percent of assessed valuation, excluding annexation levies); and
3. Waives compliance with Section 4301(b) of Metropolitan's Administrative Code for any tax levy that utilizes this finding regarding Section 124.5 of the Act.

I HEREBY CERTIFY that the foregoing is a full, true, and correct copy of a resolution of the Board of Directors of The Metropolitan Water District of Southern California, adopted at its meeting held April 14, 2020.



Secretary of the Board of Directors
of The Metropolitan Water District
of Southern California

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

