

August 23, 2020

Dan Denham, Deputy General Manager
San Diego County Water Authority
4677 Overland Avenue
San Diego, California 92123-1233

RE: Comment on DLM Engineering and Gillingham Water Review of SDCWA Projections for
MWD Price Escalation and Water Rates

Introduction and Executive Summary

The San Diego County Water Authority (SDCWA) has asked Water Resource Consultants Inc. (WRC) to comment on the engineering review by DLM Engineering and Gillingham Water (DLM&G) (Review) related to SDCWA's Regional Conveyance System (RCS) and draft Phase A study (RCS Study). Specifically, WRC has been asked to express an opinion on the engineers' conclusion that, while the RCS is technically feasible and its estimate of costs reasonable, the RCS is not cost-effective when evaluated using what DLM&G believe are more reasonable assumptions about MWD price escalation and future water rates. The sole focus of this paper is to comment on DLM&G's assumptions and analysis regarding MWD future price escalation and water rates, and not on any other issues raised in the Review.

The engineers conclude that SDCWA's projection of MWD rates is not "economically sustainable," and, as a result, is highly unlikely to occur. In support of its conclusion, the engineers opine that MWD will either have to reduce the costs that drive the rates, shift costs away from volumetric-based charges to firm unavoidable fixed charges, or a combination of the two. This opinion is not based on any actual MWD data, project(s) review or even MWD rate projections. Rather, the DLM&G conclusion that "rates are highly unlikely to increase at these levels relative to other supply options," is based solely on its own conclusory statement that, "they cannot."¹

WRC is familiar with and has reviewed the long-term historical trend in MWD rates as well as other factors and key drivers that will be likely to contribute to future rate trends at MWD. This data and my analysis support SDCWA's MWD rate projections over the study period for the RCS and other project alternatives. The Analysis section of this report explains in more detail the data and methodology supporting my conclusions.

¹ Report of the MAM Independent Consultant: SDCWA Regional Conveyance System Feasibility Review July 2020, page 16.

Professional Qualifications of WRC

WRC was founded in 2008. The firm specializes in providing planning, management, financial and rate expert advice to public and private water entities throughout California. Its principal, Robert Campbell, has over 45 years experience working in the public and private sector water industry. Prior to founding WRC, Mr. Campbell was employed at the Metropolitan Water District ("MWD") from 1970 to 1991 serving in various engineering, operations, and financial management levels and as the Financial Services Manager responsible for directing preparation of the agency's annual capital and operating budget, managing debt restructurings and issuance, preparing financial feasibility and rate analyses of agency capital and water resource improvement programs, and developing and implementing tax, revenue, and rate setting policies. During 1983-1984, he co-managed a year-long revenue and rate restructuring process with the District's Board of Directors resulting in substantial changes to MWD's water and tax rate policies, the addition of new fixed revenue sources and debt issuance alternatives, and reserve policy changes.

From 1991 to 2003 he was employed by the San Diego County Water Authority (SDCWA) where he served as its Chief Financial Officer directing all financial operations including accounting, treasury, debt administration, and revenue and rate setting policies. During this period, he directed a two-year cost of service, revenue and rate restructuring process with SDCWA and its 24 member agencies to diversify rates and charges and provide new and more stable revenue sources. He also served as an executive level manager in the General Manager's office directing and managing the development, acquisition and implementation of new diversified water resources, including negotiating and obtaining water agreements related to the Colorado River Quantification Settlement Agreement (QSA), SDCWA's up to 75- year Transfer Agreement with the Imperial Irrigation District for 200,000 acre-feet of conserved water, Allocation Agreement for 77,700 acre-feet of conserved water from the All American and Coachella Canal lining projects, and SDCWA/MWD Exchange Agreement for conveyance of 277,700 acre feet of imported water transfers. From 2003 to 2008, he served at SDCWA in a consulting capacity providing advice on implementation of the QSA and related transfer agreements, and new programs related to water transfers and groundwater storage agreements with various California entities.

Mr. Campbell holds both Bachelor of Arts and Master of Public Administration degrees from California State University, Northridge.

Analysis

As noted above, WRC's review is expressly limited to analyzing the available data regarding MWD's future rates as projected by SDCWA to evaluate the feasibility of the RCS.

The economic analysis presented by SDCWA assumes MWD prices will escalate at 5.1 percent per year throughout the 92-year period of analysis. Data presented by Water Authority staff at

its March 12, 2020 special board meeting documented that MWD Full Service Tier 1 Supply rate has a 20-year escalation average of 5.1 percent per year and that the Exchange rate components (System Access + Water Stewardship + System Power) have a collective 20-year escalation average of 4.5 percent per year. The Phase A RCS Study applies the overall 5.1 percent Full Service rate to all MWD rate components (Tier 1 Supply and Exchange rates).

DLM&G state that... "Accurate forecasting of long term water rates is difficult. Many factors drive the price of water, including capital costs, increased operating cost, and changing sales volumes." They go on to state that... "[t]he point is that MWD price escalation at 5.1 percent over the entire 92 year period of analysis is not sustainable, and is therefore highly unlikely to occur; the system will need to adapt and adjust."²

WRC's analysis shows that the SDCWA baseline assumption is not just reasonable based on historical facts, but conservatively lower than the past 81-years of record. While systems may adapt and adjust, the DLM&G Review provides no evidence to support when or how MWD will adapt and adjust. Until now, MWD's budget and water rates have continued to increase in spite of significantly lower sales of MWD water. WRC's analysis also looks ahead to identify the cost drivers that will likely result in MWD rate increases that meet or exceed the SDCWA projections.

Overview of MWD

The Metropolitan Water District Act authorizes MWD to levy property taxes within its service area; establish water rates; impose charges for water standby and service availability; incur general obligation bonded indebtedness and issue revenue bonds, notes and short-term revenue certificates; execute contracts; and exercise the power of eminent domain for the purpose of acquiring property. MWD's charges for water sales and availability are fixed by its Board, and are not subject to regulation or approval by the California Public Utilities Commission or any other state or federal agency; MWD's rates are subject to Proposition 26 and other cost of service rate-setting legal requirements. MWD'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. The collective economy of the six counties which comprise MWD's service area has a gross domestic product larger than all but fifteen nations of the world. MWD began delivering water in 1941. MWD's water is a supplemental supply for its member agencies, most of whom have other sources of water. MWD has historically provided between 40 and 60 percent of the water used annually within its service area.

MWD owns and operates an extensive water delivery system including: the Colorado River Aqueduct, 16 hydroelectric facilities, nine reservoirs, 819 miles of large-scale pipes and five water treatment plants. Four of these treatment plants are among the 10 largest plants in the world. MWD is the largest distributor of treated drinking water in the United States. The District imports water from the Feather River in Northern California and the Colorado River to supplement the local supplies available to its member agencies. It also provides financial

² Ibid, pages 15-16.

subsidies to some member agencies to develop water recycling, storage and other local water supplies.

Brief Historical Overview of MWD Rates and Taxation Policies

MWD was formed in 1928. Until water deliveries began in 1941, MWD's activities were, by necessity, supported entirely through the collection of *ad valorem* property taxes. In 1960, when the District's participation in the State Water Project was under consideration, MWD's water pricing and taxation policies came under extensive discussion. A specific water pricing and taxation policy was developed which applied to the future costs of the State Water Project as well as the continuing costs of the Colorado River Aqueduct.

Costs of the combined projects would be repaid under a formula which required all operating costs and at least half of the capital costs would be paid by water users. The remaining capital costs would be paid by taxpayers, with the expectation and plan that the tax burden would gradually be reduced over time as greater amounts of water were sold.

In 1974, MWD's board again looked at the District's taxing and water pricing policies. That review was prompted by a number of factors including the greatly expanded area of the District, the effects of limitations on State Water Contract project supplies, the future loss of Colorado River water, long-term energy costs, and whether the rising price of water would have an effect on consumption.

In 1979, a new formula for setting water rates and tax rates was developed. It was called the "proportionate use formula." Under this formula, water users would pay all operating and maintenance costs and an increasing portion of capital costs as water deliveries increased. Taxpayers, meanwhile, would pay the remaining capital costs, but their share would decrease as water sales increased.

Since the early 1980s, water sales revenues have provided approximately 75 to 85 percent of total revenues and *ad valorem* property taxes have accounted for about 10 percent of revenues. MWD's remaining revenues are *de minimis*, and have been derived principally from the sale of hydroelectric power, interest on investments and additional revenue sources (water standby charges and availability of service charges beginning in 1993).

Beginning in fiscal year 1990-91, *ad valorem* taxes were applied solely to pay annual debt service on MWD's general obligation bonds and a small portion of State Water Contract payment obligations, pursuant to requirements in the MWD Act that limit property tax collections to the amount necessary to pay annual debt service on MWD's general obligation bonds plus the portion of its State Water Contract payment obligation attributable to the debt service on State general obligation bonds for facilities benefitting MWD that were outstanding as of 1990-91. Under this requirement, MWD's *ad valorem* property tax revenue has been decreasing, and will continue to decrease as the bonds are retired. However, the MWD Act permits MWD to set aside the prescribed reductions in the tax rate if the Board, following a

public hearing with 10 days’ prior written notice to the Speaker of the California Assembly and the President pro Tempore of the Senate, finds that such revenue in excess of the restriction is “essential to the fiscal integrity of the district.”

MWD historically identified three kinds of water service: (1) full service; (2) replenishment (discontinued effective December 31, 2012); and (3) interim agricultural (discontinued effective December 31, 2012). Beginning in 2003, MWD implemented a two-tiered supply rate structure which unbundled its full service water rate into separate rate components: (1) tier-one and tier-two supply; (2) system access, for conveyance and distribution; (3) water stewardship; (4) power; and (5) treatment.

The process for the delivery of water not owned or controlled by MWD is referred to as “wheeling.” Under the current rate structure, wheeling parties pay the System Access Rate and Water Stewardship Rate, Treatment Surcharge (if applicable) and power costs for wheeling transactions. MWD’s wheeling rate has been the subject of litigation between SDCWA and MWD in which the Court found MWD’s wheeling rate and charges under the Water Authority’s Exchange Agreement illegal, based on its inclusion of the Water Stewardship Rate. MWD recently suspended charging its Water Stewardship Rate for calendar years 2021 and 2022, but has announced it plans to bring back an alternative funding source for its water conservation and demand management programs as part of its 2022 rate setting process.

MWD currently has two sources of fixed revenue (taxes and Standby/RTS/Capacity charges) that comprise approximately 15-20% of its revenue base (but see discussion below how wheeling revenues paid by SDCWA are the financial equivalent of a fixed charge).

**Summary of MWD Revenues³
(\$ in millions)**

Revenue Category	Fiscal Year Ended June 30, 2019	Percent Total
Water	\$1,149	74.7%
Taxes	145	9.5
Standby, RTS, Capacity Charges	170	11.0
Other ⁴	74	4.8
Total	\$1,538	100%

Since the California Legislature placed limitations on MWD's authority to impose ad valorem property taxes, its tax revenues have gradually diminished as originally planned. As noted above, MWD has authority to impose a greater tax levy if the Board of Directors finds that such revenue is “essential” to maintain MWD's “fiscal integrity.” Since fiscal year 2014, MWD has

³ MWD Water Revenue Bonds, Final Official Statement, Water Revenue Refunding Bonds, 2020 Series C, page A-53, June 9, 2020. MWD includes wheeling revenues as a water “transaction” included as a sale of MWD water.

⁴ Interest income, Power sales, and miscellaneous income.

voted to suspend the tax limitation and maintain the fiscal year 2013 ad valorem tax rate in order to pay for a greater portion of MWD's SWP obligation that would otherwise have to be paid by other water rates and charges.

The RTS charge is designed to recover a portion of capital expenditures for infrastructure projects needed to provide standby service, and peak conveyance needs. The RTS is allocated to each member agency in proportion to the rolling ten-year share of firm deliveries through MWD's system. The budgeted total RTS revenue for fiscal year ended June 30, 2019 was \$136.5 million, of which \$43.6 million was estimated to be collected via a Standby Charge on property parcels. Each year MWD prepares an Engineer's Report as part of its cost of service analysis to determine the costs that could be paid from the RTS. The benefits described in this Engineer's Report greatly exceed the fiscal year 2019 RTS/Standby Charge budgeted amount by at least \$347 million.

In designing rates, fixed charges are viewed as being desirable from a utility viewpoint because they provide a measure of revenue stability to the utility. At the same time, advocates of conservation believe that a rate structure must find a reasonable balance between fixed and variable charges that allows the variable charge to provide an adequate and reasonable price signal to the customer regarding their consumptive use. These differing views provide a clear example that the goals and objectives of the utility, customers, and various community stakeholders should be carefully considered in the design of rates in general. And, of course, no matter how a rate structure is designed as between volumetric and fixed charges, the rates must comply with California law regarding cost of service.

Principles of water conservation best management practices strongly encourage recovering the maximum amount of revenue from variable commodity charges.⁵ However, best management practices also recognize the challenges and financial constraints presented for utilities that are 100% dependent on variable commodity charges. To achieve a reasonable balance between fixed and variable charges, many water utilities have adopted a practice of not deriving more than about 30% of total revenues from fixed charges – and again, all in compliance with cost of service limitations.

MWD's 81-Year Historical Rate Trends Support SDCWA Projections

Financial analysts and economists often use historical data among other factors to forecast future water rate trends. Historical trends are one tool that can be helpful in extrapolating future trends especially as the duration and availability of historical data increases and other contributing factors to rate increases are identified. Rather than looking at snapshots in time such as 10- or 20-year timeframes, longer periods can help to smooth out variations due to temporary or periodic anomalies such as weather related demand and sales variations that cause above average or below average rate adjustments. Historical trends must of course also be subject to review based on known changed circumstances that may impact future rates and

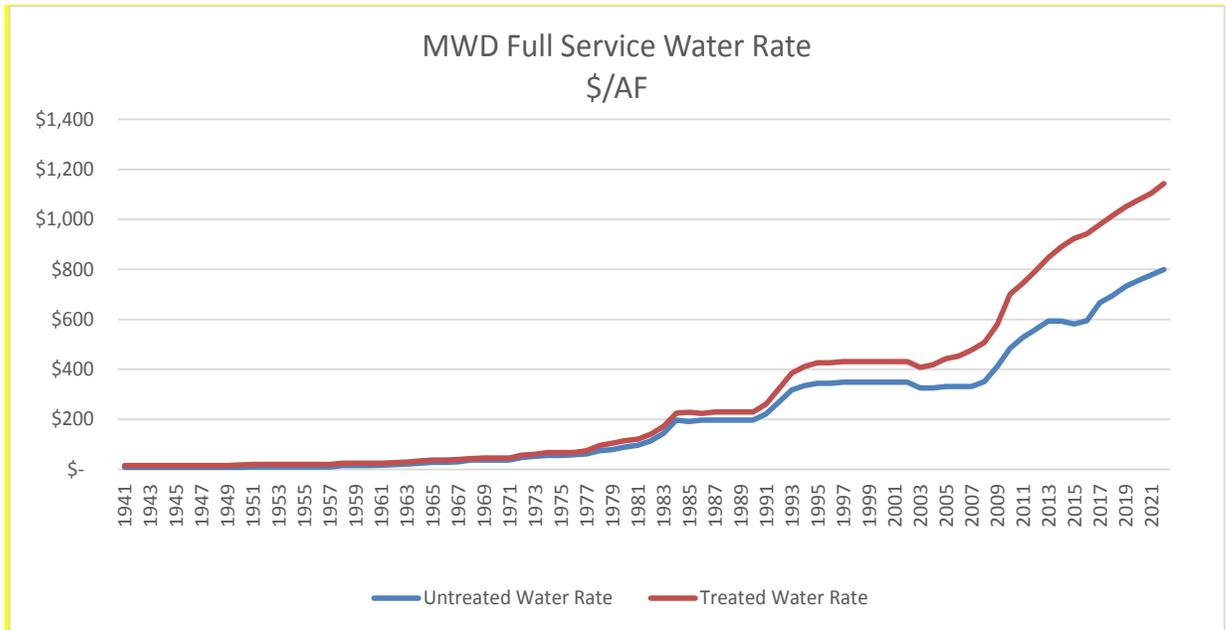
⁵ California Urban Water Conservation Council Best Management Practice 11.

trends (see discussion below on the key drivers that are likely to impact future MWD water rates).

Since 1941 when MWD first began charging water rates, untreated rates have escalated nearly 100 fold over the past 81 years, from \$8 per acre foot in 1941 to \$799 per acre foot in 2022, and treated rates have escalated from \$15 per acre foot to \$1143 per acre foot. Overall, the average annual increase has been 5.5 percent between 1941 and 2022. Over the same period the untreated rate has increased at an average annual rate of 5.85 percent.

Since 1980, when MWD was mandated by state law to begin shifting its revenue policies away from taxes to deriving a majority of its revenues from water rates, untreated rates continued to steadily increase from \$79 per acre foot to \$799 per acre foot in 2022, and treated rates have increased from \$104 per acre foot to \$1143, or an average annual increase of 5.66 percent and 5.87 percent respectively over the 42-year period.

Since 2003 when MWD unbundled its rate structure untreated and treated rates have increased at an average annual rate of 4.83 percent and 5.57 percent over the 19-year period⁶. MWD's unbundled wheeling or transportation rate (excluding the Water Stewardship Rate) has increased at an average annual rate of 4.76 percent over the same period.



What is evident over all the above periods is that MWD's Tier 1 full service untreated and treated rate increases of 5.85 percent and 5.5 percent, respectively, have steadily trended upward over the duration of the 81-year period.⁷ Between 1941 and 1979 taxes were the predominant source of revenue, which served to dampen the impact and steepness of the curve

⁶ 5.2% and 5.88% if the Water Stewardship Rate for years 2021 and 2022 (presently funded from reserves) is included.

⁷ MWD's Tier 2 water sales are essentially zero, the reasons for which are beyond the scope of this comment.

of water rate increases in those early years. However, it is notable that throughout the remaining 42-year period after 1979 rates increased at an annual average of 5.66 percent and 5.87 percent, respectively for untreated and treated rates. In some isolated or intermediate periods, fluctuations up or down in annual sales has resulted in above average and below average rate increase years *but the trend has been consistently upward over a longer duration*. A variety of factors have consistently contributed to the increases over the period mostly due to revenue requirements for system capital construction and replacements, operation and maintenance, water supply acquisitions, treatment and water quality requirements, and environmental and State Water Project costs. The following table describes historical trends in the various treated and untreated rate components for the stated time periods, used as part of Water Authority projections of future MWD water rates and charges.

MWD Historic Rate Increases 1941-2022

Rate or Rate Component	1941	1980	2003	2022	Average Annual Increase 1941 to 2022 (%)	Average Annual Increase, 1980 to 2022 (%)	Average Annual Increase, 2003 to 2022 (%)
Tier 1 Supply, \$/AF	N/A	N/A	\$73	\$243	N/A	N/A	6.53%
System Access, \$/AF	N/A	N/A	\$141	\$389	N/A	N/A	5.49%
Water Stewardship, \$/AF ⁸	N/A	N/A	\$23	N/A	N/A	N/A	N/A
System Power, \$/AF	N/A	N/A	\$89	\$167	N/A	N/A	3.37%
Untreated, Full Service, \$/AF	\$8	\$79	\$326	\$799 ⁹	5.85%	5.66%	4.83%
Treatment Surcharge, \$/AF	N/A	N/A	\$82	\$344	N/A	N/A	7.84%
Treated, Full Service, \$/AF	\$15	\$104	\$408	\$1143	5.5%	5.87%	5.57%
Wheeling Service \$/AF ¹⁰	N/A	N/A	\$230	\$556	N/A	N/A	4.76%

⁸ Rate has been suspended for years 2021 and 2022 and is being funded from reserves.

⁹ Inclusion of suspended Water Stewardship Rate of \$65/AF would increase untreated full service rate to \$864/AF resulting in corresponding average annual increase for 2003 to 2022 of 5.2%.

Key Drivers that Could Impact MWD's Future Water Rates also Support SDCWA Projections

While looking back at historical trends is useful in extrapolating future trends in water rates, it is also essential to consider factors and known drivers that could materially influence future rate trends. Following are several key factors that are likely to impact MWD's future water rates, causing them to increase at a pace higher than historical trends.

A. Cost Impact of Extension of State Water Project Contract and Delta Conveyance Project

Extension of State Water Project Contract

MWD's State Water Project Contract accounts for nearly 50 percent of the total entitlement contracted for by all contractors and provides MWD with rights to water through 2035. MWD intends to exercise its option to extend its agreement with the State through 2085, which will result in continued escalating capital and annual minimum operations and maintenance costs (OMP&R) through 2085. State project expenditures account for approximately 37 percent of MWD's annual budget expenditures. The California Aqueduct is approaching 60 years since construction and operation began. DWR's assets and the supporting water management infrastructure are reaching end of life. DWR will need to address its aging infrastructure, and impacts associated with climate change, population growth, ecosystem stressors, and funding constraints.

In the next three years, DWR plans to adopt a framework for condition assessment, risk management, and strategic planning for capital investments to prepare the SWP infrastructure for the next 50 years.¹¹ The Oroville spillways emergency accelerated the Department's understanding of the dual realities of aging infrastructure and extreme hydrology. The Department will reconstruct both spillways to their original design capacity and advance the development of a comprehensive needs assessment for the safe operation of the dam and its appurtenances into the future; complete an asset management plan for all State Water Project facilities; and obtain permits for and begin implementation of a delta conveyance facility. While it is unknown at this time what the aging infrastructure and related project replacement costs will be, estimates of a delta conveyance facility are in the billions of dollars (see discussion below).

Delta Conveyance Project

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 Bay-Delta facility in lieu of MWD's proposed two-tunnel WaterFix project. Cost of a single tunnel facility is estimated at \$12.13 billion in 2020 dollars. MWD's proportional share could be 1/2 to 2/3 of the cost, or up to \$8 billion.¹² If financed at 4% over a 40 year repayment period annual debt service payments would be approximately \$404 million. Annual facility O&M, power, replacement and mitigation costs would add approximately \$50 million per year resulting in total annual payments of

¹⁰ Excludes Water Stewardship Rate.

¹¹ Department of Water Resources Strategic Plan, dated October 2019.

¹² MWD Board of Directors Letter 8-7 dated April 10, 2018, page 2.

\$454 million (2020 dollars). The construction period for the project is estimated at 15 years. Construction cash flows would be financed throughout this period with the final bond issuance when construction is substantially complete and the project becomes operational (15th year). Assuming construction were to begin within the next five years the expected operational date would be somewhere between 2036 and 2041 and final repayment of the bonds would conclude between 2076 and 2081. It is estimated that MWD's annual rate increases for the project could be up to 2% during the 15-year construction period with annual payments continuing for an additional 25 years.¹³

The project has several significant uncertainties which could result in additional risks and cost escalation. These include timing of project construction and final operational date, interest rate risk, and SWP contractor default on payments for which MWD ratepayers may be responsible. These risks are generally identified in a MWD staff report to its Board of Directors seeking approval for one of two options for implementing California WaterFix, and MWD's most recent Official Statement issued in connection with the sale of bonds.¹⁴ It should also be noted that MWD has advocated to DWR to allow Delta tunnel facilities to be characterized as "supply and/or transportation" rather than as supply costs, as they would be under the current SWP contract; this would have a unique and materially negative impact on San Diego ratepayers who have made alternative investments to reduce demand on the Bay-Delta.

B. Cost Impact of SWP Aqueduct Land Subsidence

Land subsidence has affected the conveyance capacity of certain portions of the California Aqueduct which will require restoration, the full potential scope of which is beyond this analysis.¹⁵ While studies are currently underway to evaluate operating scenarios and project alternatives, MWD's General Manager reported that preliminary estimates by DWR could be as high as "\$3 billion to \$5 billion in 2020 dollars for repairing the aqueduct over the next generation."¹⁶ MWD's proportional share of the costs could be at least one-half or more of these costs. These numbers may be refined once additional phases of DWR's subsidence study report are released.

C. Cost Impact of MWD's Regional Recycled Water Program

MWD's Conceptual Planning Studies Report completed in 2019¹⁷ presents the results of further technical studies and analyses related to the Regional Recycled Water Program (RRWP) being considered by MWD and the Sanitation Districts of Los Angeles County (Sanitation Districts).

As configured in the 2016 Feasibility Study, the RRWP would produce up to 150 million gallons per day (mgd) or 168,000 acre-feet per year of purified water in partnership with the Sanitation Districts. A new advanced water treatment facility would be located at the Sanitation Districts' Joint Water Pollution

¹³ Ibid, page 2.

¹⁴ MWD Board of Directors Letter 8-7 dated April 10, 2018, Attachments 1 through 3 and MWD Water Revenue Bonds, Final Official Statement, Water Revenue Refunding Bonds, 2020 Series C, June 9, 2020, page A-18.

¹⁵ CALIFORNIA AQUEDUCT SUBSIDENCE STUDY San Luis Field Division San Joaquin Field Division, dated June 2017.

¹⁶ Oral report by Jeffrey Kightlinger to San County Water Authority Board of Directors, December 19, 2019.

¹⁷ Regional Recycled Water Program Conceptual Planning Studies, Report No. 1618, dated February 21, 2019.

Control Plant (JWPCP) in Carson and a new regional conveyance system would deliver a reliable source of IPR water to recharge four regional groundwater basins: Central, West Coast, Main San Gabriel, and Orange County.

The Feasibility Study assumed that the 150-mgd program would be implemented in a single phase. One of the primary goals of the conceptual planning studies was to evaluate implementation phasing alternatives. Program phasing can be advantageous when there are uncertainties regarding the ultimate demands, availability of source water supply, or needed capacity of a program.

The Conceptual Planning Studies Report updated costs estimates for a single phase and compared those costs with a proposed program first phase project (Backbone System) to be implemented in multiple phases. The single phase project capital costs were estimated at \$3.08 billion (2018 dollars) and annual O&M costs were estimated at \$134 million. The proposed Backbone System phase 1 capital costs were estimated at \$2.62 billion plus an additional \$782 million second phase for a total capital cost of \$3.4 billion (2018 dollars). Annual O&M costs were estimated at \$129 million.

MWD staff is moving forward with this project and therefore its costs should be included in any review of MWD's projected rates.¹⁸

D. Cost Impact of MWD Asset Management Program

Asset replacement and refurbishment is a growing concern across the nation. In 2002 MWD completed an asset replacement funding study.¹⁹ The study's purpose was two-fold. First, the study forecast the annual amount of replacement and refurbishment (R&R) needed to maintain MWD's system at its current reliability level. Second, various funding methods were evaluated in terms of rate impact and funding adequacy. In addition, staff evaluated necessary changes to existing reserve and capital funding strategies in light of MWD's extensive R&R needs.

The method used in the asset replacement study was consistent with that employed at a number of other water utilities. An asset inventory was identified utilizing MWD's fixed asset records. These assets were divided into asset classes, each with a designated economic life. The life of the asset classes was determined on the basis of engineering analysis by MWD and the consultant on the study, Brown and Caldwell. Given these projected timelines, a computer model estimated the current replacement value of MWD's capital assets and projected R&R funding needs by year. The planning horizon was 50 years, although funding needs were estimated for the next 30 years.

The replacement value of MWD's system was estimated to be \$12.6 billion in 2002 dollars (\$18-20 billion in 2020 dollars). This does not include obligations that MWD has with regard to the State Water

¹⁸ MWD has not had a long-range finance plan since 2004; instead, it provides 10-year rate projections every two years when it sets rates and charges for the next two calendar years. During the 2020 rate-setting, MWD included only planning costs of the Delta tunnel and RRWP for 2021 and 2022 and did not include any capital costs of the Delta tunnel or RRWP in later years. For this reason alone, SDCWA projections of MWD rate increases are highly conservative.

¹⁹ MWD Board of Directors staff report 9-2, dated June 11, 2002.

Project, discussed above. Annual R&R funding needs were estimated to be between \$100 million and \$150 million over the initial 10 years, with annual expenditures forecast to increase to over \$200 million in 20 years and over \$300 million in 30 years, or approximately \$6.7 billion over a 30-year period. Currently annual R&R expenditures total \$120 million and are funded by pay-as-you-go revenues in the annual budget. These expenditures are expected to gradually increase over the next 30 years.

E. Cost Impact of MWD Local Resource Program (LRP)

Since 1982, MWD has assisted local agencies to develop local water recycling and groundwater recovery projects (LRP) by providing funding assistance through the rates and charges it imposes on MWD member agencies. In 2014 the program was revised to include seawater desalination. The target level for achieving new water supplies through this program was, upon the recommendation of MWD staff, increased in 2018 to 170,000 acre feet.

In June 2018 MWD staff presented a graphic²⁰ to its Board that estimated future LRP expenditures for currently contracted LRP projects. An analysis of the graphic estimates that future expenditures from 2020 onward are \$325.5 million. LRPs approved since that 2018 report total an estimated additional \$504.2 million (assuming full term incentive for projects) resulting in current future total LRP obligations of \$829.7 million.

While MWD's funding assistance has contributed to achieving statewide water conservation goals and development of additional local supplies in the region, the program has a two-fold impact on MWD water rates. Conservation and local supply development decreases water purchases from MWD and also results in a corresponding contractual obligation for funding assistance over a duration of up to 25 years.

MWD historically funded LRP financial assistance through its Water Stewardship Rate which has been suspended and is presently being funded over the next two years from reserves.

F. Impact of Member Agency Water Supplies Developed without MWD Subsidies

Several MWD member agencies or their sub-agencies are developing, planning or considering additional local water projects without reliance on MWD subsidies. Examples of this include construction of additional wells (Three Valleys MWD), enhancing conjunctive use of groundwater (Eastern and Western MWD), and water transfers (City of Los Angeles and Santa Margarita Water District). Like projects that receive MWD subsidies, these projects will reduce demand for MWD supplies and thereby have an impact on future MWD water rates or rate components applied across a decreasing sales base. As MWD rates continue to increase, more and more projects are likely to become economically viable with or without subsidies.

²⁰ June 12, 2018 Presentation to MWD Conservation Local Resources Committee titled "Update of Status of Local Resources Program."

G. Impact of Reduced Demand for MWD Water

MWD water sales to its member agencies have been declining from about 1.88 million acre-feet in 2014 to 1.16 million acre-feet in 2019.²¹ Leaving aside wheeling charges paid by SDCWA (which MWD includes in its reported “water transactions”), MWD *water sales* have declined by 720,000 acre feet over the past five years. A significant portion of this decline can be attributed to continued conservation and development of local supplies by MWD's member agencies. While this trend could reasonably be expected to continue due to increasing MWD rate increases and additional member agency local supply development, MWD's current 10-year rate forecast assumes MWD water sales will *increase* from projected 2020 of 1.27 million acre feet to 1.47 million acre feet. The forecast does not provide any explanation of the projected increase in water sales over the forecast period. The forecast also assumes annual rate increases will range between 3 to 5 percent; however, as noted earlier, billions of dollars in planned capital costs have not been included in these rate projections. A continued downward trend from 2019 MWD water sales would have a material impact on projected rates in the 10-year period and beyond. Since MWD relies on revenues from water sales and SDCWA's wheeling for about 75 percent of its total revenues, MWD also must plan for the risk that SDCWA may construct alternative facilities for the delivery of its 280,000 acre feet of Colorado River water.²² This wheeled water supply represents nearly 18 percent of MWD's total water deliveries and currently provides MWD with a much needed fixed revenue source.

H. Impact of Continued Disputes Over MWD Cost Allocation

One of the major issues in the rate litigation between SDCWA and MWD is whether Proposition 26 and other legal requirements mandating that rates and charges bear a reasonable relationship to benefits received by customers, apply to MWD. While the Water Authority contends that Proposition 26 applies to MWD (and in fact was applied by the Court of Appeal to MWD's rates in the 2010-2012 cases), MWD continues to deny that is the case, opening the possibility for unlawfully shifting costs among customers to the detriment of San Diego County and the potential for further litigation. Based on historical experience, the continued practice of allocating costs without regard to which agencies benefit from MWD expenditures would drive MWD rate impacts even higher than those projected by SDCWA in the RCS Study.

Conclusion

The DLM&G engineers' report is not based on past or future data analyses; rather, it simply concludes that future MWD rates as projected by SDCWA “cannot” happen. SDCWA's projections, on the other

²¹ MWD Water Revenue Bonds, Final Official Statement, Water Revenue Refunding Bonds, 2020 Series C, June 9, 2020, page A-98, Historical Water Transactions as Billed. To distinguish between water sales and wheeling, MWD's "water transactions" have been adjusted here to exclude SDCWA wheeling as a MWD “water sale” or “transaction.” Preliminary data from MWD sales estimates ending June 30, 2020 indicate a continuing decline in its water sales to 1.1 million acre feet, or 780, 000 acre feet since 2014.

²² SDCWA is conducting a Regional Conveyance Study now to explore potential alternatives to use of MWD facilities to transport its Colorado River water.

hand, are based on the historical record and reasonable projections of MWD's future costs; the Water Authority's projections are, if anything, unduly conservative.²³

The 81-year historical trend of MWD's average annual rate increases demonstrates that SDCWA's projections are reasonable based on a historical fact basis. Looking ahead, several key drivers will result in MWD rate increases that are likely to approximate if not exceed SDCWA's projections. These key drivers include (1) the need to make significant investments in system asset replacements and rehabilitations in both MWD's and the SWP's water delivery systems due to the infrastructure of these systems reaching the end of their useful life; (2) continued investments in the Bay-Delta to address yet-to-be-monetized objectives including climate change, environmental and water supply reliability; (3) continued investment in Colorado River programs, regional and local supply development to augment MWD's lower priority right to Colorado River water due to risk of diminishing water supply availability in the Colorado River Basin and to mitigate risk of drought impacts in both the northern California and Colorado River watershed areas due to climate change (some of these costs could be reduced if MWD were to manage its resources in cooperation with its own member agencies).²⁴

Future MWD rates will also be impacted by continued reductions in supplemental water demands from MWD due to conservation and local supply development within its service area. It is also reasonable to assume that factors unknown today such as further environmental challenges and constraints, hydrology and weather patterns, increased energy prices and declining freshwater supplies could also significantly contribute to escalation of MWD water prices given the heavy reliance on exported water systems over which MWD has little control.

While it is clear that MWD rates may reasonably be expected to increase consistent with historical trends or more due to the above factors and key drivers, now and into the foreseeable future, the impacts on individual MWD member agencies such as the Water Authority also depend on MWD's cost of service allocations and any future adjustments in its rate structure, which are unknown and beyond the scope of this review.

Sincerely,

Robert Campbell
Water Resource Consultants Inc.

²³ Management changes and a host of other political challenges at MWD, both internally and externally, are beyond the scope of this comment.

²⁴ Again, the subject of how MWD could more economically manage Colorado River issues is beyond the scope of this paper.