



April 12, 2021

Gloria Gray, Chair
Metropolitan Water District of Southern California
700 North Alameda Street
Los Angeles, CA 90012

Sent via email to: efandialan@mwdh2o.com

RE: Comments on the Draft Urban Water Management Plan of the Metropolitan Water District of Southern California

Dear Chair Gray, Members of the Board, and Staff:

On behalf of the Natural Resources Defense Council (“NRDC”) and NRDC Action Fund, which have over 3 million members and activists, more than 450,000 of whom are Californians, I am writing to provide comments on the Draft Urban Water Management Plan (“Draft UWMP”) prepared by the Metropolitan Water District of Southern California (“MWD”). In our review of the Draft UWMP, we find that it:

- Overestimates likely demand for water from MWD in the future, because it overestimates per-capita water demand and significantly underestimates water supplies from several categories of local and regional water supply projects; and
- Significantly overestimates projected water supplies that will be available to be imported from the Colorado River and Bay-Delta, particularly with respect to water transfers and water storage programs.

The Draft UWMP reflects the fact that in general, demand for water in Southern California continues to decline. Overall, the Draft UWMP projects that total regional demand between 2025 – 2040 will be 9.46 percent lower across all water-year types than the previous 2015 UWMP’s projections. Meanwhile, total MWD demand (demand after conservation and local supplies) has decreased even more significantly; compared to the 2015 UWMP’s projections, the Draft UWMP projects 31.88 percent less total MWD demand across all water-year types through 2040.

Despite decreases in demand compared to the previous 2015 UWMP, the Draft UWMP nevertheless appears to overestimate demand for imported water. The Draft UWMP’s demand projections seem to underestimate likely decreases in per capita water consumption, which would further lower demand projections. Moreover, the Draft UWMP appears to overestimate the demand for storage replenishment during dry years and five-year droughts, artificially inflating demand for those respective models.

NATURAL RESOURCES DEFENSE COUNCIL

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It appears that the Draft UWMP has used an inconsistent approach to estimating water supply from local and regional sources versus imported water supplies. In general, the Draft UWMP appears to make aggressive assumptions with respect to imported water supplies, assuming the maximum potential amounts of imported water (“capability”) from water transfers and water storage programs, rather than realistic estimates of water supplies from these sources. In contrast, the Draft UWMP appears to use very conservative assumptions for local and regional water supplies, excluding water supply from many local and regional projects that are planned in the region.

Where possible, we have recommended specific revisions to the Draft UWMP to address these concerns. Even with NRDC’s recommended revisions, it appears that the Final UWMP will show that MWD likely has a substantial surplus of water supplies, based on current estimates of imported water.

However, it is abundantly clear that MWD’s imported water supplies from the Bay-Delta and Colorado River will be reduced from the levels assumed in the Draft UWMP, due to climate change and the need to significantly strengthen protections for the Bay-Delta. For instance, in 2018 the State Water Resources Control Board (“State Water Board”) released its Framework for updating the Bay-Delta Water Quality Control Plan, which estimated that total diversions from the Bay-Delta would be reduced by approximately 2 million acre-feet (“MAF”) per year, which would be a 17 percent reduction in total diversions from the watershed.¹ While the State Water Board’s 2018 Framework does not identify a specific reduction in imported water to MWD, it is critical that MWD continue to plan for reduced diversions from the Bay-Delta.

Thankfully, the Draft UWMP demonstrates that even with significantly reduced water diversions from the Bay-Delta, Southern California can adapt by reducing demand through continued improvements in water use efficiency and the development of local water supply projects. There are tremendous opportunities to increase water supply from local and regional projects that are not included in the Draft UWMP’s estimates of water supply. These projects improve water supply reliability and create good paying jobs in the communities that MWD serves. Given the likely reductions in imported water supplies in the future, the Board should not use the Draft UWMP’s conclusion that MWD has a surplus of water to reduce funding for local and regional water supply projects.

On the pages that follow, we provide specific comments and recommendations regarding the Draft UWMP.

¹ This document is available online at:
https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/sed/sac_delta_framework_070618%20.pdf.

I. The Draft UWMP Likely Overestimates Demand for Imported Water from MWD

Historically, projected demand for imported water from MWD increased in each previous urban water management plan, while in reality, demand for imported water has consistently been less than that projected in those prior plans. In contrast, the Draft UWMP estimates that demand for water from MWD will be significantly lower than the average MWD water sales over the past decade, and it also projects that demand for imported water from MWD will further decline between 2020 and 2045. While we concur that demand for imported water from MWD will continue to decline, it appears that the Draft UWMP still overestimates likely demand for imported water because it underestimates improved water use efficiency in the coming decades and underestimates water supply from local and regional water projects.

a. The Draft UWMP Projects Significant Reductions in Demand for Water from MWD Compared to Recent Years

Compared to recent water sales over the past decade or longer, the Draft UWMP estimates reductions in demand for imported water from MWD. Although water transactions in fiscal year 2019-2020 (1.36 MAF) were the lowest recorded since 1983, the 10-year average for MWD’s water transactions is significantly higher at 1.69 MAF. MWD Annual Report 2020 at 7.² The Draft UWMP reflects the general decreasing trend in water transactions, projecting that total MWD deliveries for 2025 – 2045 across all water-year types are likely to be lower than the recent 10-year average of 1.69 MAF, as shown in the table below.

	2025	2030	2035	2040	2045
Single Dry-Year	1,597,000	1,548,000	1,505,000	1,524,000	1,551,000
Five-Year Drought	1,629,000	1,610,000	1,575,000	1,568,000	1,591,000
Normal Year	1,469,000	1,420,000	1,379,000	1,394,000	1,418,000

See Draft UWMP Tables 2-4 – 2-6. Total MWD deliveries are the sum of total MWD demands and SDCWA exchange. Water transactions calculated for the past ten years similarly include “water sales, wheeling and exchange water transactions.” MWD Annual Report 2020 at 11.

² Available online at: http://www.mwdh2o.com/PDF_Who_We_Are/2020_AnnualReport.pdf. As the MWD Annual Report 2020 observes, the low demand in 2019-2020 reflected continued conservation efforts, investments in local supplies, and wet weather and cooler temperatures that decreased local water demand and replenished local supplies.

Although the Draft UWMP anticipates lower water sales than the prior decade and projects that sales will continue to decline over the next 25 years, the Draft UWMP appears to overestimate demand for imported water from MWD, as discussed in more detail below.

b. The Draft UWMP Overestimates Demand for Imported Water from MWD Because It Does Not Fully Account for Decreasing Trends in Per Capita Demand and Appears to Overestimate Population Growth

Because the Draft UWMP appears to underestimate improved water use efficiency in the region over the next 25 years, it appears to overestimate likely demand for imported water from MWD. Although the Draft UWMP recognizes that per capita water use has declined significantly in the service area over the past 15 years, it does not provide per capita water use estimates through 2045. We encourage MWD to revise the Draft UWMP to provide estimates of per capita residential water use over the length of the plan. As discussed below, based on the data that has been presented, the Draft UWMP appears to conclude that per capita residential water use in 2045 will remain roughly the same as today. Given the trends of increasing water use efficiency and changes in residential development patterns, MWD is likely see further reductions in per capita water use in MWD's service area and the Draft UWMP likely overestimates demand.

Per capita water use has decreased significantly over the past 15 years. *See* Draft UWMP at 3-84 (Figure 3-4). MWD's water efficiency target under SB 7x7 of 2009 was 146 gallons per capita per day (GPCD) for 2020, which was based on a 1996-2005 average baseline of 182 GPCD. Draft UWMP at 3-83. MWD will easily exceed that target, having reported per capita water use of 131 GPCD in 2015 and per capita water use of 121 GPCD in 2019. *Id.* However, the Draft UWMP does not provide estimates of per capita water use after 2020, and we strongly urge MWD to revise the Draft UWMP to provide estimates of per capita water use through 2045.

Because the Draft UWMP did not provide data on per capita water use after 2020, NRDC used data in the Draft UWMP to generate an estimate of the trend in per capita residential water use over time. We summed MWD's projected single-family residential demand and multi-family residential demand to approximate residential retail demand, and then we divided that total by the Draft UWMP's population predictions for residents within MWD's service area to estimate per capita residential water use from 2020 to 2045. This calculation is different from the methodology used under SB 7x7 and cannot be compared to those analyses. However, using that analysis and the data presented in the Draft UWMP, we estimate that 2020 per capita water will be around 115 GPCD and is expected to decline to around 113 GPCD in 2030 and remain near that level through 2045. Nationally, residential water use has declined at a rate of one percent annually and may decline even more drastically in California given our water efficient product standards and outdoor landscape ordinances.

	2020	2025	2030	2035	2040	2045
Residential Demand (acre-feet)	2,454,000	2,552,000	2,607,000	2,674,000	2,731,000	2,786,000
Population in Metropolitan's Service Area	19,035,000	20,089,000	20,634,000	21,145,000	21,610,000	22,026,000
Per Capita Residential Demand (GPCD)	115.1	113.4	112.8	112.9	112.8	112.9

See Draft UWMP Tables A.1-2 and A.1-13, at A.1-10 and A.1-14, respectively. While Southern California has significantly reduced per capita water use over the past several decades, there are tremendous opportunities to further improve water use efficiency through 2045, both indoors and outdoors. MWD's assumptions regarding water demand in Appendix G are conservative and likely overestimate demand for water. For instance, Appendix G appears to assume only 50 percent compliance with implementation of the Model Water Efficient Landscape Ordinance ("MWELO"), despite existing legal requirements. More generally, new housing developments are likely to be significantly more efficient than existing housing; while the Draft UWMP reflects increased proportions of multifamily housing (which use less water for outdoor landscaping), it is not clear that it accounts for the increased water use efficiency of new housing and changes in development patterns in these demand projections.

In addition, the Draft UWMP appears to overestimate population growth within MWD's service area between 2020 and 2045, which could also result in overestimating demand for water. Most notably, while the Department of Finance estimates that the total population within the six counties that are partially or wholly served by MWD (Los Angeles, Orange County, Riverside, San Bernardino, San Diego, and Ventura) will grow by six percent between 2020 and 2045 (from 22.189M to 23.559M),³ the Draft UWMP estimates that the total population within MWD's service area will grow by 15.7 percent between 2020 and 2045 (from 19.035M to 22.026M). See Draft UWMP at A.1-10 (Table A.1-2). It is unclear why the Draft UWMP estimates that the population within the MWD service area will grow at twice the rate that is estimated in these same counties over the same time period, and growth at the same rate projected by the Department of Finance would significantly reduce water demand over the coming decades compared to the estimates in the Draft UWMP.

³ See California Department of Finance, Population Projections, P-2: County Population Projections (2010-2060), available online at: <https://www.dof.ca.gov/Forecasting/Demographics/Projections/>.

As a result of these assumptions, the Draft UWMP likely overestimates total demand and per capita demand. We encourage MWD to revisit the assumptions underlying these water demand projections, and to reevaluate how recently realized decreases in per capita demand might continue in the future.⁴

c. The Draft UWMP Appears to Overestimate Demand Because It Fails to Provide a Reasoned Explanation for Its Assumption of Water Demand for Storage Replenishment During Dry Years and Five-Year Droughts

The Draft UWMP fails to explain the basis for its assumptions regarding water demand for storage replenishment, and we urge MWD to further justify or eliminate the assumptions regarding storage replenishment demand in single dry years and five-year droughts. The Draft UWMP defines storage replenishment as “the amount of water member agencies plan to use to replenish their groundwater basins or surface reservoirs” to sustain basin or reservoir health and functioning. Draft UWMP at 2-8. Aside from this cursory introduction, MWD provides little information on how to calculate storage replenishment demand for its service area. While it is logical to replenish lost stores during normal or above-average water years, MWD projects that storage replenishment demand will be 11,000 acre-feet more during any given dry year than during a normal year. Moreover, MWD assumes that storage replenishment demand will remain high (between 257,000 and 325,000 acre-feet) during multiyear droughts. Draft UWMP Table 2-2 at 2-12. The table below shows MWD’s projected storage replenishment demands, in acre-feet, across the three water-year types.

	2025	2030	2035	2040	2045
<i>Single Dry-Year</i>	345,000	325,000	334,000	336,000	337,000
<i>Five-Year Drought</i>	257,000	311,000	318,000	323,000	325,000
<i>Normal Year</i>	334,000	314,000	323,000	325,000	326,000

See Draft UWMP Tables 2-1 – 2-3. It is unclear why the Draft UWMP estimates higher demand for water for storage replenishment during dry years and droughts, particularly since MWD’s Water Storage Contingency Plan explains that water for long term seasonal and groundwater

⁴ In addition, the Draft UWMP does not include the text for Appendix 13, which is described as “Alternative Forecasts for Demand on Metropolitan.” MWD staff indicated via email to NRDC that Appendix 13 would be made available to the public by the end of April. MWD must provide an opportunity for public review and comment on Appendix 13 if MWD seeks to submit it to the Department of Water Resources (“DWR”) as part of the final UWMP.

replenishment could be reduced or curtailed entirely during droughts. See Draft UWMP, Appendix 4.

Moreover, the Draft UWMP increases storage replenishment estimates under the normal water year scenario and the five-year drought scenario compared to the February 2021 Draft UWMP. Similarly, the Draft UWMP reflects a marked increase from the previous 2015 UWMP.⁵ MWD should provide a reasoned explanation for the storage replenishment modeling in the Draft UWMP, and further justify the assumptions regarding demand for water replenishment, including the assumptions of higher estimates for single dry-years than normal years, and further elaborate on the changes that led to dramatic increases in storage replenishment estimates compared to the 2015 UWMP and previous drafts.

II. The Draft UWMP Appears to Overestimate Demand for Imported Water from MWD Because It Inaccurately Estimates Water Supply from Local and Regional Water Projects

The Draft UWMP appears to overestimate demand for imported water from MWD because it inaccurately assesses water supply from local and regional projects. Local and regional water supply projects provide approximately half of the water supply in the MWD service area. Draft UWMP at 1-23. The Draft UWMP recognizes that as local and regional water supplies increase, the amount of imported water from MWD necessary to meet the same level of demand decreases. *Id.* at 2-7. Local and regional water supply projects like water recycling and stormwater capture are essential elements of the region's supply portfolio, and these projects are generally more sustainable, more cost-effective, and often more drought resistant than water imported from the Bay-Delta. These types of projects also create well-paying local jobs in the community. Increased growth from local water supplies is essential in light of the effects of climate change and the inevitable reductions in imported water from the Bay-Delta in the future. Encouragingly, the Draft UWMP demonstrates that there is a wealth of local and regional water supply projects that are being implemented or planned that will help the region adapt to a future with less imported water.

In 2017, NRDC released a report summarizing our review of MWD's 2015 UWMP,⁶ in which we found that MWD significantly overestimated demand and underestimated local water supply,

⁵ The 2015 UWMP single-dry year model predicted that storage replenishment demand between 2025 – 2040 would be on average 38,500 acre-feet less annually than the Draft UWMP's projections. The 2015 UWMP's five-year drought model called for an average of 6,000 fewer acre-feet of storage replenishment annually. For normal water years, the 2015 Draft UWMP predicted that storage replenishment demand would be 27,500 acre-feet less on average.

⁶ *Mismatched: A Comparison of Future Water Supply and Demand For the Metropolitan Water District of Southern California*, available online at: <https://www.nrdc.org/sites/default/files/mismatched-water-mwd-southern-ca-ib.pdf>.

as compared to its member agencies. We appreciate that MWD has attempted to work more closely with its member agencies regarding projections of water supply from local and regional projects in developing the Draft UWMP. However, as we discuss below, the Draft UWMP appears to underestimate likely water supply from water recycling projects, overestimate supply from the Los Angeles Aqueduct, overestimate supply from “In Region Supplies and Programs” in normal water year types, and underestimate supply from stormwater capture and groundwater recharge. We encourage MWD to revise the Draft UWMP to more accurately project water supply from local and regional projects now and into the future.

a. The Draft UWMP Underestimates the Likely Water Supply from Water Recycling and Fails to Provide a Reasoned Explanation for Its Estimate of 2045 Supply

Although the Draft UWMP projects a substantial increase in local water supply from water recycling projects over the next 25 years, it does not explain the basis for its 2045 estimate of supply. Equally important, the Draft UWMP appears to significantly underestimate the likely water supply from the numerous specific water recycling projects that are planned in the region, including the Regional Recycled Water Program.

The Draft UWMP estimates that local water supply from water recycling will increase from 441,000 acre-feet in 2020 to an estimated 678,000 acre-feet in 2045. *See* Draft UWMP at 3-58; *id.* at 1-25. However, the Draft UWMP fails to explain the basis for this estimate of 678,000 acre-feet, which is significantly lower than the total of approximately 944,000 acre-feet of supply from the specific water recycling projects that are included in Appendix 5 and from the Regional Recycled Water Program,⁷ as shown in the table below.

UWMP Estimate in 2045	UWMP Current (2020)	Construction (Appendix 5)	Regional Recycled Water Program (RRWP)	Existing, in construction, and RRWP	Conceptual (Appendix 5)	TOTAL
678,000	441,000	113,192	168,000	722,192	221,852	944,044

It is not clear why the Draft UWMP used the estimate of 678,000 acre-feet, based on the projects listed in Appendix 5. Including all of these projects in the Final UWMP would increase local supplies by approximately 266,000 acre-feet, which is equivalent to nearly a 15 percent State Water Project (“SWP”) allocation each year. At a minimum, it is abundantly clear that there

⁷ Although the Draft UWMP discusses the Regional Recycled Water Program repeatedly, the yield from this project appears to be excluded from the estimates of water supply yield from water recycling by 2045, in both the body of the report and Appendix 5. It is unclear why the yield from this project is excluded entirely from the Draft UWMP.

remain significant opportunities – based on specific projects that are being planned by member agencies – to dramatically increase the supply of recycled water compared to the amounts shown in the Draft UWMP. We urge MWD to include the yield from the Regional Recycled Water Program in Appendix 5 and to include this and other planned water recycling projects, including the San Diego Pure Water Phase II, in the Final UWMP.

b. The Draft UWMP Assumes Extremely Limited Increases in Water Supply from Stormwater Capture and Groundwater Recharge Between 2020 and 2045

The Draft UWMP uses inconsistent terminology that made it difficult for NRDC to directly compare estimates of yield from stormwater capture, but it appears that the Draft UWMP assumes very limited increases in water supply from stormwater capture and groundwater recharge projects. Based on review of Table A.11-2, the Draft UWMP appears to estimate that water supply from stormwater capture and groundwater recharge would only increase by 14,000 acre-feet between 2020 and 2045, as shown in the table below.⁸

Water Supplies Contributing to Regional Self-Reliance (Acre-Feet)	2020	2045	Difference
Water Use Efficiency	1,056,000	1,389,000	333,000
Water Recycling	436,000	678,000	242,000
Stormwater Capture and Use	110,000	88,000	-22,000
Advanced Water Technologies	194,000	213,000	19,000
Conjunctive Use Projects	1,303,000	1,320,000	17,000

See Draft UWMP at Table A.11-2. This result is counterintuitive, given the significant estimated water supply potential from stormwater capture in the region⁹ and the passage of Measure W in Los Angeles County to fund stormwater projects. It is also unclear if this estimate is consistent with projections from MWD’s member agencies; for example, Table ES-S in the Los Angeles Department of Water and Power’s (“LADWP’s”) draft UWMP estimates that stormwater capture and groundwater replenishment will increase total local groundwater supply in an average year

⁸ See Draft UWMP at Table A.11-2. The 14,000 acre foot estimate was calculated by summing the change in supply between 2020 and 2045 in the “Stormwater Capture and Use” category (-22,000 acre-feet), “Advanced Water Technologies” category (19,000 acre-feet) and “Conjunctive Use Projects” category (17,000 acre-feet).

⁹ NRDC and the Pacific Institute, 2014 The Untapped Potential of California’s Water Supply: Efficiency, Reuse and Stormwater (2014), available online at: <https://www.nrdc.org/resources/untapped-potential-californias-water-supply>.

by 14,000 acre-feet between 2025 and 2045.¹⁰ LADWP's draft UWMP also estimates that under a more aggressive approach to stormwater capture, groundwater supply could be 46,000 acre-feet higher than estimated in Table ES-S. *See* LADWP, draft UWMP, at ES-18.

It is clear that there are very substantial opportunities for groundwater recharge and stormwater capture beyond those analyzed in the Draft UWMP, and that the likely amount of water supply from these sources is significantly higher than estimated in the Draft UWMP. We encourage MWD to review these estimates ensure that the Final UWMP is consistent with the estimates from MWD's member agencies.

c. The Draft UWMP Appears to Overestimate Supply from the Los Angeles Aqueduct

The Draft UWMP's estimate of local water supply from the Los Angeles Aqueduct appears to overestimate yield compared to the estimate in LADWP's draft UWMP. MWD's Draft UWMP estimates that in 2045, the Los Angeles Aqueduct would yield 258,000 acre-feet (normal water year) and 118,000 acre-feet (single dry year). *See* Draft UWMP at Table 1-5. In contrast, LADWP's draft UWMP¹¹ estimates that in 2045, the Los Angeles Aqueduct would yield 184,000 acre-feet (normal water year) and 68,500 acre-feet (single dry year). We encourage MWD to revise the Draft UWMP to be consistent with LADWP's estimates.

III. The Draft UWMP Overestimates Likely Water Supplies from the California Aqueduct

The Draft UWMP fails to explain the basis for the assumptions regarding water supply from the California Aqueduct, particularly assumptions regarding water supply from water transfers, and the Draft UWMP appears to significantly overestimate likely water supply from the California Aqueduct. We encourage MWD to revise the Draft UWMP to provide a better explanation of the assumptions regarding water supply and to eliminate the assumptions regarding water transfers and carryover water in normal water-year types.

The Draft UWMP uses modeling from the DWR's 2019 Delivery Capability Report to estimate SWP deliveries during a normal water year and single dry year. *See* Draft UWMP at 2-7. The 2019 Delivery Capability Report estimates that under current conditions, in an average year the SWP will deliver 58 percent of maximum Table A contract amounts, 7 percent in a single dry

¹⁰ LADWP's draft UWMP is available online at:
https://www.ladwp.com/cs/idcplg?IdcService=GET_FILE&dDocName=OPLADWPCCB747866&RevisionSelectionMethod=LatestReleased.

¹¹ *See* footnote 10, *supra*.

year (1977), and 26 percent or 28 percent per year over a six year drought.¹² These estimates do not account for the inevitable reductions in water diversions from the Bay-Delta that will be implemented in the near future in order to better protect the environment and water quality and adapt to climate change, and as a result they overestimate likely Bay-Delta water supplies in future years.

But even using DWR’s estimate for SWP supplies, the Draft UWMP appears to significantly overestimate water supply from the California Aqueduct because of its unreasonable assumptions regarding carryover water in San Luis Reservoir and water transfers.

	SWP Table A ¹³	SWP Carryover	Subtotal	Transfers	Total ¹⁴
Normal Water Year	1,221,000	282,000 ¹⁵	1,523,000	253,000	1,776,000
Single Dry-Year	134,000	282,000	416,000	217,000	633,000
Five-Year Drought	550,000	56,000	606,000	183,000	789,000

Source: Draft UWMP Tables 3-2 and 3-3.

a. The Draft UWMP Makes Unreasonable Assumptions Regarding Water Supplies from Carryover Storage, Particularly in Normal Water Years

The Draft UWMP makes several unrealistic assumptions regarding water supply from carryover storage, particularly the assumption that 282,000 acre-feet of carryover water is available in normal years.

¹² Under future conditions with sea level rise in 2040, DWR’s Delivery Capability Report estimates that the SWP would deliver 53 percent of maximum Table A amounts in an average year and 12 percent in 1977 conditions.

¹³ This includes both MWD and Desert Water Agency’s Table A supplies, consistent with Table 3-2 in the Draft UWMP, which subtracts the same out of water from Colorado River supplies in Table 3-1.

¹⁴ These amounts in the Total column are consistent with the results for 2035 presented in Tables 2-4 and 2-5, but it is not consistent with the normal year deliveries reported in Table 2-6 (Table 2-6 reports 1,763,000).

¹⁵ The Draft UWMP explains that MWD’s maximum carryover in San Luis Reservoir is 200,000 acre-feet, but it does not explain whether Desert Water Agency’s maximum carryover is 82,000 acre-feet.

First, the Draft UWMP appears to assume that MWD can use its full Table A allocation and its full carryover storage in a single year, and still have the full carryover storage available in subsequent years. But water is available as carryover storage in a subsequent year only to the extent that MWD does not use its full SWP allocation and reserves some of that water for carryover in San Luis Reservoir. As the Draft UWMP explains,

When water from the SWP cannot be put to immediate use in Metropolitan's service area, the water may be stored for future use. Provided storage capacity is available, the water may remain in either Oroville Reservoir (as SWP storage for delivery to all contractors the following year) or San Luis Reservoir (as carryover storage assigned to Metropolitan). Through the carryover storage program, as amended by the Monterey Amendment, Metropolitan can place a maximum of 200,000 af per year of allocated supplies in SWP surface reservoirs.¹⁶

Draft UWMP, Attachment A (pdf page 439). In other words, if MWD uses its full SWP Table A allocation in a single year, it cannot also use all of its carryover storage that year and then refill carryover storage that year so that it can be used in the following year (without including the full replenishment of carryover storage in that same year as part of demands). Yet that is what the Draft UWMP appears to show, effectively double counting this imported water as both Table A and carryover storage.¹⁷

Second, the Draft UWMP assumes that MWD has maximum carryover storage available in all water years and uses that entire amount, an assumption that is not justified in the Draft UWMP. Moreover, if San Luis Reservoir is full (in wet years), then any water that is stored as carryover water in San Luis Reservoir will spill and be lost. *Id.* Not only does MWD not necessarily have the maximum amount of water supply in carryover storage in any given year, but MWD may have access to little to no water from carryover storage in any year.

Third, the Draft UWMP assumes that carryover water is part of the water supply in normal water years. However, as the Draft UWMP admits elsewhere, San Luis carryover storage and Central Valley storage programs are generally used in dry years and they are omitted from the calculation of normal water year supplies in Table A.11-3. *See id.* at A.11-8.

¹⁶ MWD's maximum carryover storage exceeds 200,000 acre-feet because MWD obtained Desert Water Agency's carryover rights in San Luis.

¹⁷ We recognize that MWD also stores water, including carryover storage, in wet years, which are not analyzed in the UWMP. However, given the infrequency of wet years, the Draft UWMP cannot rely on having water in carryover storage without showing that MWD will ensure that carryover storage is refilled, which the Draft UWMP does not do.

Because carryover storage is primarily intended to be used for dry year supply, because it must be replenished to be available in subsequent years, and because it can be spilled and the amounts of carryover storage are not reliable, we urge MWD to revise the Draft UWMP to eliminate water supply from carryover storage in normal water years and to reduce the amount of water supply from carryover storage in other water year types.

b. The Draft UWMP Overestimates Water Supplies from Water Transfers Through the California Aqueduct

The Draft UWMP also significantly overestimates the likely water supply available from water transfers, assuming much higher amounts of water transfers than MWD has reported over the past several decades in the Draft UWMP.

First, the estimates of water supply from water transfers identified in Table 3-3 (which are included in the assumptions regarding water supply from the California Aqueduct in Tables 2-4 to 2-6) are dramatically higher than the amount of water transfers that MWD has successfully negotiated in recent years that are documented in the Draft UWMP. For instance, the Draft UWMP reports that MWD obtained approximately 122,000 acre-feet of water transfers in total over the 2016-2020 period, and was able to obtain less than 100,000 acre-feet in dry or critically dry years of 2008 (27,000 acre-feet), 2009 (37,000 acre-feet), and 2015 (13,000 acre-feet). *See* Draft UWMP at 3-35. The only year in which the Draft UWMP documents that MWD obtained more than 100,000 acre-feet of water from water transfers was 2010. *Id.* In contrast, the Draft UWMP assumes 183,000 acre-feet per year in a 5 year drought (nearly five times more water than was acquired in 2009 through water transfers) and 217,000 acre-feet in a single dry year (nearly six times more water than was acquired in 2009 through water transfers).

Moreover, the amounts from specific water transfer programs identified in Table 3-3 appear to be significantly higher than the maximum amounts from these specific programs identified in the text of the Draft UWMP. For instance, while Table 3-3 estimates that 70,000 acre-feet are available from Antelope Valley/East Kern Acquisition and Storage in a normal year and 79,000 acre-feet in a single dry year, the text of the Draft UWMP states that, “The exchange program is expected to deliver 30 TAF over ten years, with 10 TAF available in dry years. Under the program, Metropolitan will also be able to store up to 30 TAF in the AVEK’s groundwater basin, with a dry year return capability of 10 TAF.” *Id.* at 3-33.

Finally, the Draft UWMP assumes more than 250,000 acre-feet of water supply from water transfers in average water years, but the text acknowledges that water transfers and water banking programs in the Central Valley are designed to provide water supply in dry years: “These partnerships allow Metropolitan to store its SWP supplies during wetter years for return in future drier years. Some programs also allow Metropolitan to purchase water in drier years for delivery via the California Aqueduct to Metropolitan’s service area.” *Id.* at 3-31.

Therefore, we urge MWD to revise the Draft UWMP to: (1) eliminate water supply from water transfers in normal water years; and, (2) to significantly reduce the water supply from water transfers in single dry years and five-year droughts to be consistent with MWD's existing contracts providing for water transfers and to reflect the much lower availability of water transfers that has historically occurred.

c. The Draft UWMP Overestimates the Amounts of Imported Water Withdrawn from Storage (“In-Region Supplies and Programs”), Particularly in Normal Water Years

The Draft UWMP appears to significantly overestimate the amount of water that MWD can withdraw from storage in normal water years (described in the Draft UWMP as “In-Region Supplies and Programs”). However, these are dry year storage facilities, and assuming extensive withdrawals from storage in normal water years would mean that less water would be available in these storage facilities for MWD to use during a single dry year and multi-year droughts.¹⁸ Therefore, we encourage MWD to eliminate this category from the Draft UWMP for normal water years, while retaining this for single dry-year and multi-year droughts, and to include it with MWD's supplies rather than as part of local and regional supplies.

In-Region Supplies and Programs are defined as water that is stored in MWD's surface reservoirs, flexible storage in SWP reservoirs (Lake Perris and Castaic Lake), and groundwater storage conjunctive use. *See* Draft UWMP at A.3-46 to A. 3-53. The total storage capacity for these facilities is estimated at 1,665,200 acre-feet. *Id.* at A.3-46. Of that total amount, approximately half is reserved for emergency storage. *Id.* at A.3-47. The other half is described in the Draft UWMP as “Dry-Year/Seasonal Storage,” *id.* at A.3-47, and is “earmarked for dry-year supply and system regulation purposes.” *Id.* These facilities store water imported from the Bay-Delta and/or Colorado River, which can be accessed when other supplies are insufficient to meet demands. That means there is approximately 812,000 acre-feet of “Dry-Year/Seasonal Storage” capacity, assuming these reservoirs are full,¹⁹ with some additional groundwater storage.

The Draft UWMP assumes 875,000 acre-feet of water supply from these facilities in a normal year, a single dry year, or over the course of a five-year drought. However, that would drain all of the water in storage that is reserved for dry-year and system regulation (assuming that these reservoirs are full to begin with), and if MWD withdraws that much water from these storage facilities in an average year, that water would not be available in subsequent dry years.

¹⁸ As we note in footnote 17, *supra*, with respect to carryover storage, these regional reservoirs and storage programs can also refill in wet years. However, the Draft UWMP does not demonstrate that these reservoirs will be full and can be completely drained in all future years.

¹⁹ The Draft UWMP states that it assumes “median storage levels” in future years, although it does not quantify what median storage in these reservoirs is.

Because the water in these storage facilities is intended for dry years, and because using that water in normal years would prevent its use in dry years, MWD should revise the Draft UWMP to exclude In-Region Supplies and Programs from the water supply available in normal years. In addition, because the Draft UWMP does not demonstrate that MWD reliably has all of this water in any future single dry year or five-year drought, MWD should reduce the amount of water supply from In Region Supplies and Programs that is assumed for single dry and five-year drought years.

d. The Draft UWMP Appears to Overestimate Colorado River Water Supplies from the Lake Mead ICS Storage Program in a Five-Year Drought

Finally, it appears that the Draft UWMP overestimates water supply from the Colorado River, particularly during a five-year drought. The Draft UWMP states that, “As of January 1, 2020, Metropolitan had a total of 866 TAF of Extraordinary Conservation ICS water in Lake Mead.” Draft UWMP at 3-9. However, Table 3-1 assumes 400,000 acre-feet per year of water supply from the Lake Mead ICS Storage Program over a five-year drought sequence, which would require that MWD have 2 million acre-feet of Extraordinary Conservation ICS water in Lake Mead. Given the lack of evidence to support the availability of such water now or in the future, MWD should revise the Draft UWMP to reduce the estimate of water supply from the Lake Mead ICS Storage Program over a five-year drought.

IV. Conclusion and Recommendations

In our review of the Draft UWMP, we have recommended significant revisions to better reflect available water supplies and demands, finding that the Draft UWMP generally overestimates total demands, overestimates imported water supplies (including imported water supplies that are stored for use in future dry years), and generally underestimates local supply water supply.

However, even with substantial revisions, it appears that MWD still has a substantial surplus of water available in normal water years, as well as in single dry years and five-year droughts, as shown in a revised version of Table 2-6 below that includes NRDC’s recommended revisions to the water supply projections for a normal water year.

REVISED Table 2-6					
Normal Water Year					
Supply Capability and Projected Demands					
	2025	2030	2035	2040	2045
Supplies					
In Region Supplies and Program	-	-	-	-	-
California Aqueduct	1,221,000	1,221,000	1,221,000	1,221,000	1,221,000

Colorado River Aqueduct	1,214,000	1,250,000	1,250,000	1,230,000	1,250,000
Total Supply	2,435,000	2,471,000	2,471,000	2,451,000	2,471,000
Demands					
Total Demands on MWD	1,191,000	1,142,000	1,101,000	1,116,000	1,140,000
Exchange with SDCWA	278,000	278,000	278,000	278,000	278,000
Total MWD Deliveries	1,469,000	1,420,000	1,379,000	1,394,000	1,418,000
Surplus/Deficit	966,000	1,051,000	1,092,000	1,057,000	1,053,000

Thanks to Southern California’s continued dedication to improving water use efficiency, and the ongoing investments in local and regional water supply projects that reduce demand for imported water, MWD has been able to save record amounts of water in storage over the past several years. The Draft UWMP, even with the significant revisions we recommend, appears to show that MWD is likely to have a surplus of water of over 1 MAF per year in normal years, and a surplus in single dry years and five-year droughts.

With climate change and the need to significantly strengthen Bay-Delta protections likely to reduce MWD deliveries from the Bay-Delta – coupled with a growing population – the Draft UWMP affirms the need for continued efforts to decrease water demand, increase water use efficiency, and increase investment in local and regional supplies across the region. Reductions in per capita water use and conservation are powerful tools to lessen overall demand. As discussed above, it is abundantly clear that MWD’s imported water supplies from the Bay-Delta and Colorado River are likely to be reduced in future years from the levels assumed in the Draft UWMP. At the same time, the Draft UWMP significantly underestimates the likely water supply from local and regional projects, which improve water supply reliability and create well-paying jobs in the communities that MWD serves. The Draft UWMP’s conclusion that MWD has a surplus of water does not justify foregoing local and regional water supply projects. By decreasing demand, increasing efficiency, and investing in local and regional water supplies, MWD can better prepare for the future.

In order to more accurately assess MWD’s future water supplies, we urge MWD to revise the Draft UWMP as recommended in these comments. We would be happy to discuss our comments and recommendations at your convenience.

Sincerely,



Doug Obegi