Review of Demand Management Cost Recovery

Finance & Insurance Committee
Item 9-4
September 13, 2021

What is Demand Management?

- Metropolitan established programs to reduce water demand on Metropolitan by reducing demand in the service area through the Conservation Program and incentivizing the development of local water resources through the Local Resources Program (LRP) and the Future Supply Actions Program.
- The current FY2021/22 budget includes Demand Management expenditures of $93 million*.

* reflecting the $43M appropriation for conservation

Why do Demand Management?

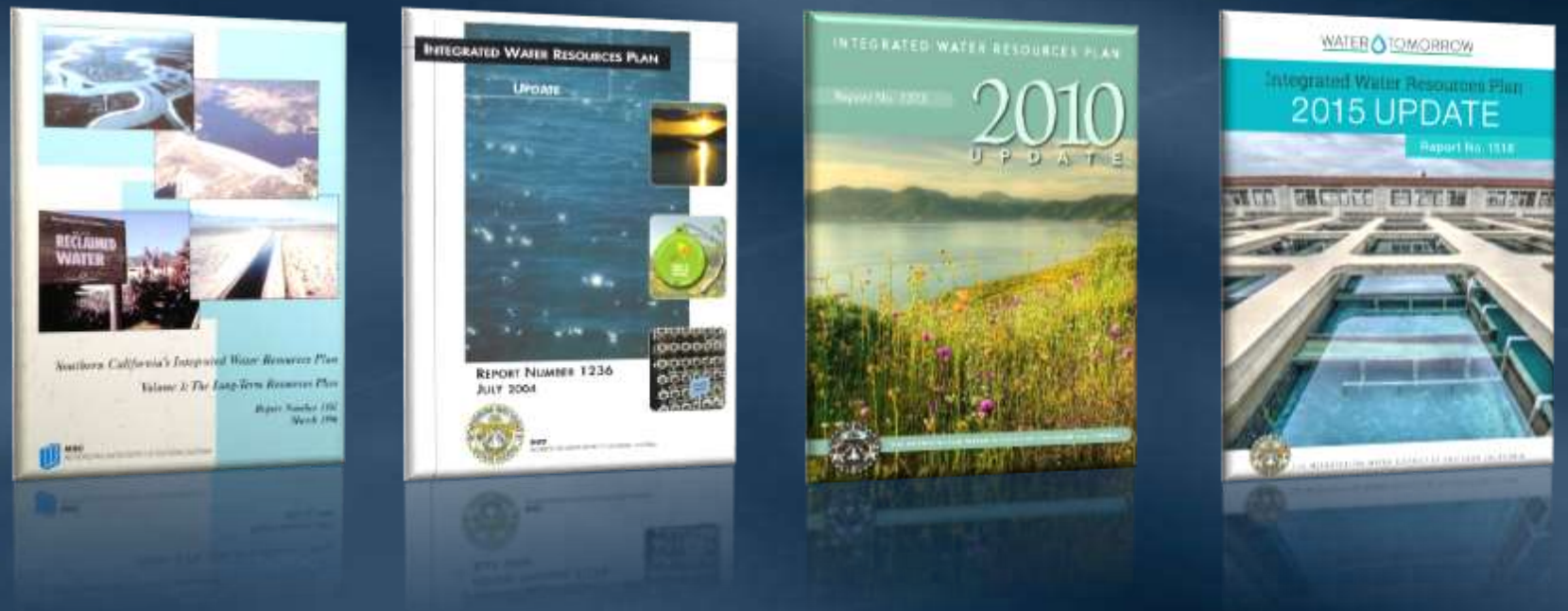
- Integrating Demand Management into the resource mix was found to offer long-term reliability at the lowest possible cost to the region as a whole.
- Demand Management provided an alternative to system expansion.

Started for Metropolitan with the 1996 Integrated Resources Plan

"This plan represents a dramatic shift in the way we look at water management now and into the future. It replaces exclusive dependence on Metropolitan for supplemental water with coordinated approaches developed in conjunction with local resources. It implements water conservation measures together with new supplies. And it searches for solutions that offer long-term reliability at the lowest possible cost to the region as a whole."

Demand Management has been an important component of every Integrated Resources Plan since 1996

1996 2004 2010 2015



For MWD, Demand Management is Both Preferred and Legislated

Preferred Resource Mix

Demand management is part of the preferred resource mix.

Demand management decreased water demand and increase local supplies thereby reducing and avoiding infrastructure expansion and new construction.

Regional participation necessary to achieve success.

State conservation laws

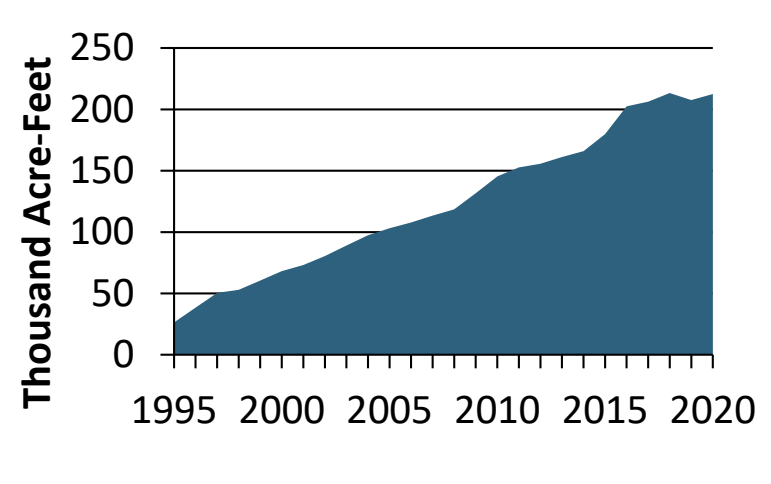
SB 60 – Specifically directed Metropolitan to increase conservation and local resource development.

SB X7-7 – Metropolitan supported the region's compliance to reduce per capita water use by 20 percent by 12/31/2020.

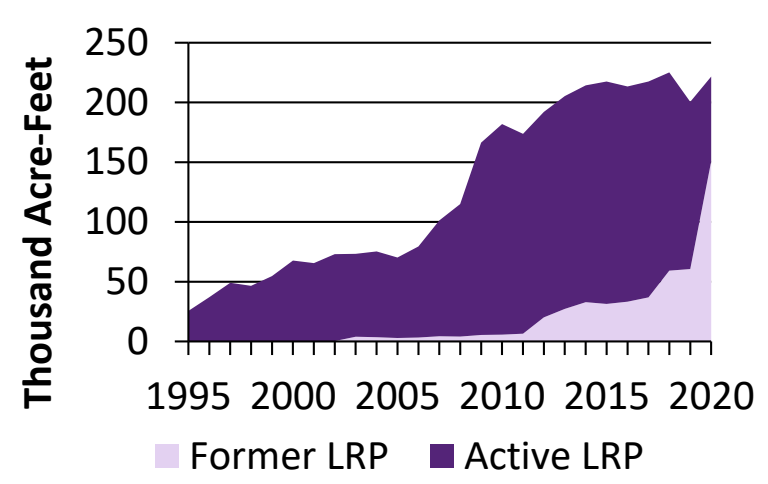
SB 606/ AB 1668 – MWD supported the Governor's Long Term Efficiency Framework legislation.

Demand Management Program Results

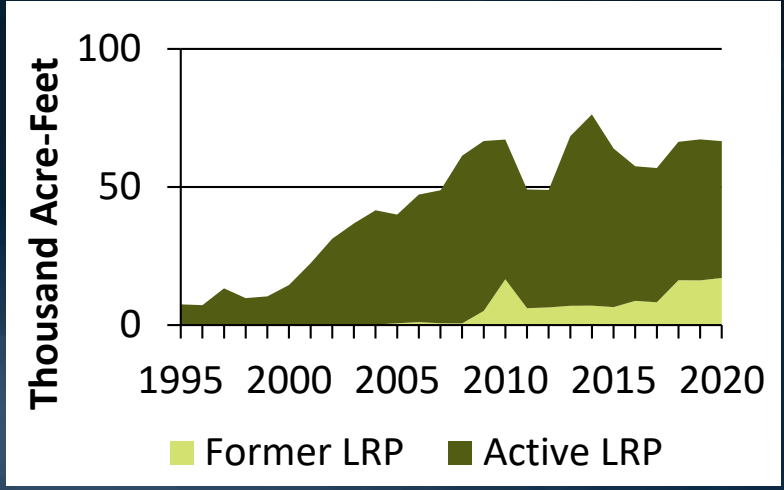
Water Saved by Conservation (1)



Recycled Water LRP Production (2)



Groundwater Recovery LRP Production (2)



Water Saved and Produced by Demand Management (AF)

FY 2019/20	Including Active & Former LRP
Water saved by Metropolitan Conservation Program (1)	213,000
Recycled Water LRP Projects (2)	222,000
Groundwater Recovery LRP Projects (2)	67,000
Total Conservation + LRP	**502,000**

(1) Water conserved in entire service area, reducing demand on Metropolitan, its member agencies, and other agencies in the area

(2) Water produced by participating member agency and other participants for their own use

FY2021/22 LRP Projects

	# of Contracts	Incentives, $
Anaheim	1	5,355
Beverly Hills	1	50,000
Burbank	1	80,000
Calleguas	3	341,237
CBMWD	1	68,000
Central Basin	2	432,000
Eastern	4	1,949,324
Inland Empire	1	1,914,880
LADWP	8	792,250
Long Beach	1	77,000
Los Angeles	4	599,135
MWDOC	12	4,569,812
Santa Monica	2	18,050
SDCWA	7	2,595,271
Three Valleys	4	225,600
Torrance	2	1,130,000
Upper SGVMWD	2	137,900
West Basin	1	125,000
Western	3	2,589,880
Grand Total	**60**	**$ 17,700,694**

Budgeted and Projected Local Resources Program Expenditures

based on fiscal years 2020/21 and 2021/22 biennial budget and 10 year financial forecast
in millions of dollars

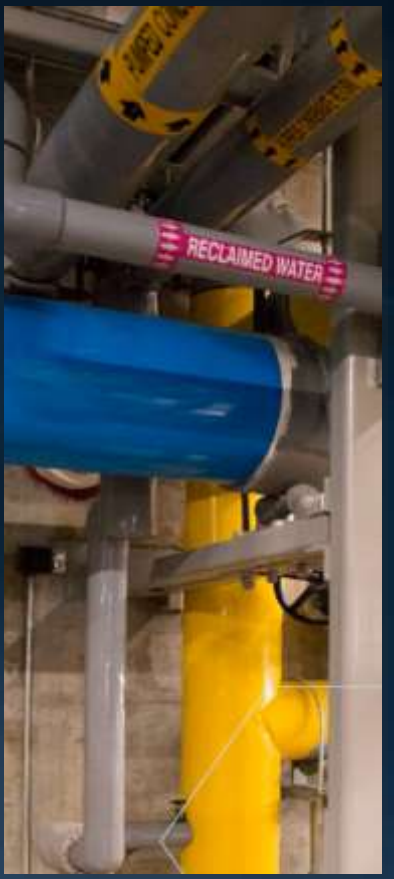
Fiscal Year Ending	2022	2023	2024	2025	2026	2027	2028	2029	2030
Estimated cost of contracted LRP Projects	$ 18	$ 22	$ 22	$ 26	$ 27	$ 31	$ 31	$ 30	$ 29
On-Site Retrofit Program	2	3	3	3	3	3	3	3	3
Future Projects to Meet IRP Target	0	1	6	11	16	22	27	32	38
Total Local Resources Program	**$ 20**	**$ 25**	**$ 31**	**$ 40**	**$ 47**	**$ 55**	**$ 61**	**$ 65**	**$ 70**

Demand Management Costs

Based on fiscal years 2020/21 and 2021/22 biennial budget and 10-year financial forecast in millions of dollars

Fiscal Year Ending	2022	2023	2024	2025	2026	2027	2028	2029	2030
Local Resources Program	$ 20	$ 25	$ 31	$ 40	$ 47	$ 55	$ 61	$ 65	$ 70
Conservation Program	43*	43	43	43	43	43	43	43	43
Future Supply Actions/Stormwater Pilot	7	3	2	2	2	2	2	2	2
O&M costs net of interest income	23	26	28	30	31	34	34	35	37
Demand Management Revenue Requirement	**$ 93**	**$ 97**	**$104**	**$115**	**$123**	**$133**	**$139**	**$144**	**$151**

* The FY 2021/22 conservation budget is $24M. The $43M reflects the appropriation.



Action is needed because DM is running out of funding.

- December 2019 the Board approved the option to use the Water Stewardship Fund (WSF) to fund demand management costs in the FY2020/21 & FY2021/22 biennial period to allow the Board to consider demand management funding in relation to the upcoming 2020 IRP update and to undergo a rate structure refinement process.
- The WSF is projected to be exhausted in FY2022/23
- The Board must establish a new Demand Management rate, charge or revenue collection mechanism that goes into effect no later than CY 2023.

WSR and Placeholder Demand Management Rate

Calendar Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Overall Rate Increases for all Rates and Charges		3%	4%	5%	5%	4%	3%	3%	3%	3%	3%
Demand Management Rate* ($/AF)	$65	-	-	$53	$65	$71	$73	$79	$82	$84	$89

*The 2020 $65/AF rate is the WSR, for CYs 2023-2030 the rate represents only a placeholder until the Board approves a method to recover demand management costs.

The $53/AF represents the entire 5% rate increase for 2023

Water Stewardship Fund (WSF)

in millions of dollars

Fiscal Year Ending	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Demand Management Revenues			-	39	96	115	125	132	140	145	151
Demand Management Rate Revenue Requirements			93	97	104	115	123	133	139	144	151
Over/(under) collection			(93)	(57)	(8)	(1)	2	(2)	1	1	(0)
End of year WSF Balance	133	125	31	-	-	-	2	1	2	3	2
Extra Funds Needed				26	8	1	-	-	-	-	-

The demand management rates do not generate enough revenue to fund the entire program and the WSF has been depleted.

Demand Management Cost Recovery Alternatives

Complexity of DM Cost Recovery

- Recovery of DM is complex because Metropolitan does not purchase water supply or build anything with the money it spends on DM.
- The entire purpose of DM is to reduce the need for Metropolitan's services; and
- The Legislature has directed Metropolitan to expand its DM investments, making the investments unavoidable

Demand Management Cost Recovery: Alternatives from Raftelis

Cost Recovery Component	Approx % of DM Costs[1]	Billing Determinant	Charge / Rate
Alt 1 - Existing COS Methodology			
T1 Supply	25%	Sales	$/AF
System Access Rate	75%	All Transactions	$/AF
Alt 2 - Modified COS Methodology			
T1 Supply	25%	Sales	$/AF
System Access Rate	50%	All Transactions	$/AF
System Power Rate	13%	All Transactions	$/AF
Readiness-to-Serve Charge	10%	Existing RTS	$/M
Capacity Charge	2%	Existing CC	$/cfs
Alt 3A - Functionalized Fixed Charge			
Supply Portion	100%	10-yr Avg Sales	Fixed $
Transportation Portion		10-yr Avg Transactions	
Alt 3B - Non-Functionalized Fixed Charge based on Population			
	100%	Population	Fixed $
Alt 3B - Non-Functionalized Fixed Charge based on Assessed Valuation			
	100%	Assessed Valuation	Fixed $

(1) Using estimated Revenue Requirement share based on 2020/21 Budget; the actual relative shares will be calculated as a part of each cost of service analysis and will differ.

Demand Management Cost Recovery: Alternatives from Rate Refinement Workgroup

Cost Recovery Component	Approx % of DM Costs	Billing Determinant	Charge / Rate
Alt 3B – Non-Functionalized Fixed Charge based on 50/50 Pop/AV			
	50%	Population	Fixed $
	50%	Assessed Valuation	
100% Supply			
T1 Supply	100%	Sales	$/AF
Variable Costs			
T1 Supply	22%[1]	Sales	$/AF
System Power Rate	78%[1]	All Transactions	$/AF
Short Term Marginal Cost- Tier 2			
T1 Supply	58%[1]	Sales	$/AF
System Power Rate	42%[1]	All Transactions	$/AF
Short Term Marginal Cost- Drought			
T1 Supply	76%[1]	Sales	$/AF
System Power Rate	24%[1]	All Transactions	$/AF
Short Term Marginal Cost- Historical Drought			
T1 Supply	62%[1]	Sales	$/AF
System Power Rate	38%[1]	All Transactions	$/AF

(1) Using estimated Revenue Requirement share based on 2020/21 Budget; the actual relative shares will be calculated as a part of each cost of service analysis and will differ.

Member Agency Top Alternatives and Recommended Eliminations (compiled August 2021)

Alternative	1st Choice Count	2nd Choice Count	3rd Choice Count	Total	Rank	Eliminate
Variable Cost	6	7	6	19	**#1**	1
Alt #1 - Existing COS	3	11	5	19	**#2**	2
Alt #2 - Modified COS	7	1	3	11	**#3**	1
Short Term MC Historical Drought	5	0	2	7	**#4**	7
Short Term Marginal Cost Drought	0	3	1	4	**#5**	22
100% Supply	2	1	0	3	**#6**	13
Short Term Marginal Cost Tier 2	0	1	1	2	**#7**	21
Alt #3B - Fixed Charge, Population	0	0	1	1	**#8**	22

Summary of 8 Alternatives selected by Member Agencies

Variable Costs

based on 2020/21 Budget, O&M Costs that vary as a function of water sales

- DM functionalized based on avoided variable costs excluding fixed O&M and capital costs.
  - Supply Programs -- $68.7M
  - CRA Power Costs less power sales -- $44.2M
  - SWC Variable Power Costs -- $201.3M
  - Variable Treatment has been excluded from functionalization. It's unclear if variable treatment costs are saved as operating treatment plants at very low flow rates has required higher chemical usage per AF.

Functionalization based on avoided variable costs

22%	$68.7 M	Supply Programs --> Supply Function --> Tier 1 Supply Rate
78%	$245.5 M	Power Costs --> C&A Function --> SPR

Cost Recovery Component	Approx % of DM Costs[1]	Billing Determinant	Charge / Rate
Variable Costs			
T1 Supply	22%	Sales	$/AF
System Power Rate	78%	All Transactions	$/AF

(1) Using a hypothetical Revenue Requirement share; the actual relative shares will be calculated as a part of each cost of service analysis and will differ.

Alternative 1: Existing COS Methodology

- DM functionalized based relative share of revenue requirements of impacted functional categories.
- DM costs functionalized per WaterDM recommendation
- Consistent with Metropolitan's existing cost of service methodology
- DM costs allocated like other fixed O&M costs to average system demand
- DM costs recovered by the T1 Supply Rate and System Access Rate

Cost Recovery Component	Approx % of DM Costs[1]	Billing Determinant	Charge / Rate
Alt 1 - Existing COS Methodology			
T1 Supply	25%	Sales	$/AF
System Access Rate	75%	All Transactions	$/AF

(1) Using a hypothetical Revenue Requirement share; the actual relative shares will be calculated as a part of each cost of service analysis and will differ.

Alternative 2: Modified COS Methodology

- DM functionalized based relative share of revenue requirements of impacted functional categories.
- DM costs functionalized per WaterDM recommendation
- Modified Metropolitan cost of service methodology in recognition that DM expenditures not only avoid fixed O&M costs associated with average system demand but avoids fixed and variable O&M and capital costs associated with average, demand and standby capacity
- DM costs recovered from variable rates and fixed charges

Cost Recovery Component	Approx % of DM Costs[1]	Billing Determinant	Charge / Rate
Alt 2 - Modified COS Methodology			
T1 Supply	25%	Sales	$/AF
System Access Rate	50%	All Transactions	$/AF
System Power Rate	13%	All Transactions	$/AF
Readiness-to-Serve Charge	10%	Existing RTS	$/M
Capacity Charge	2%	Existing CC	$/cfs

(1) Using a hypothetical Revenue Requirement share; the actual relative shares will be calculated as a part of each cost of service analysis and will differ.

Short Term MC– Historical Drought

Based on 2020/21 Budget and historical North of Delta transfers

- DM functionalized based on avoided marginal costs -- the cost of the next increment of water service. The supply costs reflects MWD's 10-year average cost of acquiring transfers from north of the Delta during MWD declared Water Supply Allocation Plan (2009, 2010, 2015). And the power cost to move the water is based on the budgeted SWC variable power rate.
  - Marginal Supply Cost -- $346/AF
  - Marginal Power Cost -- $210/AF

Functionalization based on short term avoided marginal cost

62%	$346/AF	Marginal Supply Cost --> Supply Function --> Tier 1 Supply Rate
38%	$210/AF	Marginal Power Cost --> C&A Function --> SPR

Cost Recovery Component	Approx % of DM Costs[1]	Billing Determinant	Charge / Rate
Short Term Marginal Cost- Historical Drought			
T1 Supply	62%	Sales	$/AF
System Power Rate	38%	All Transactions	$/AF

(1) Using a hypothetical Revenue Requirement share; the actual relative shares will be calculated as a part of each cost of service analysis and will differ.

Short Term Marginal Cost –Drought

Based on 2020/21 Budget and recent Board action on max transfer price

- DM functionalized based on avoided marginal costs -- the cost of the next increment of water service. The supply costs is based on the maximum the board authorized to pay ($675/AF) during the current critically dry supply condition. And the power cost to move the water is based on the budgeted SWC variable power rate.
  - Marginal Supply Cost -- $675/AF
  - Marginal Power Cost -- $210/AF

Functionalization based on short term avoided marginal cost

76%	$675/AF	Marginal Supply Cost --> Supply Function --> Tier 1 Supply Rate
24%	$210/AF	Marginal Power Cost --> C&A Function --> SPR

Cost Recovery Component	Approx % of DM Costs[1]	Billing Determinant	Charge / Rate
Short Term Marginal Cost- Drought			
T1 Supply	76%	Sales	$/AF
System Power Rate	24%	All Transactions	$/AF

(1) Using a hypothetical Revenue Requirement share; the actual relative shares will be calculated as a part of each cost of service analysis and will differ.

100% Supply

- DM functionalized 100% to supply.
- 100% of demand management costs would be recovered by the Tier 1 Supply Rate.
- DM costs would be recovered from 100% variable rate.

Cost Recovery Component	Approx % of DM Costs	Billing Determinant	Charge / Rate
100% Supply			
T1 Supply	100%	Sales	$/AF

Short Term Marginal Cost –Tier 2

Based on 2020/21 Budget

- DM functionalized based on avoided marginal costs -- the cost of the next increment of water service. The supply costs is based on historic North of Delta transfers (the Tier-2 rate) representing the average cost of transfer water during wet/avg/dry supply conditions. And the power cost to move the water is based on the budgeted SWC variable power rate.
  - Marginal Supply Cost -- $285/AF
  - Marginal Power Cost -- $210/AF

Functionalization based on short term avoided marginal cost

58%	$285/AF	Marginal Supply Cost --> Supply Function --> Tier 1 Supply Rate
42%	$210/AF	Marginal Power Cost --> C&A Function --> SPR

Cost Recovery Component	Approx % of DM Costs[1]	Billing Determinant	Charge / Rate
Short Term Marginal Cost- Tier 2			
T1 Supply	58%	Sales	$/AF
System Power Rate	42%	All Transactions	$/AF

(1) Using a hypothetical Revenue Requirement share; the actual relative shares will be calculated as a part of each cost of service analysis and will differ.

Alternative 3B: Non-Functionalized Fixed Charge based on Population

- Functionalization of DM costs is not necessary as costs are not recovered based on system usage but rather based on a Member Agency's population.
- DM allocated to a new fixed charge.
- DM costs are largely fixed in nature and this approach provides a fixed revenue source
- All member agencies would be subject to the DM Fixed Charge based on their share of population in Metropolitan's service area.

Cost Recovery Component	Approx % of DM Costs	Billing Determinant	Charge / Rate
Alt 3B - Non-Functionalized Fixed Charge based on Population			
	100%	Population	Fixed $

Estimated 2021 Member Agency Impacts of Demand Mgt Cost Recovery Alternatives vs Prior WSR

Red = increase > 5%
Green = decrease > 5%
White = change < 5%

	Raftelis Financial Consultants			Rate Refinement Workgroup				
	Alt #1	Alt #2	Alt 3B Population	100% Supply	Variable Cost	Short Term MC – Tier 2	Short Term MC – Drought	Short Term Marginal Cost Historical Drought
Anaheim	5%	10%	121%	14%	3%	8%	10%	8%
Beverly Hills	5%	7%	-64%	14%	3%	8%	10%	8%
Burbank	5%	4%	-36%	14%	3%	8%	10%	8%
Calleguas MWD	5%	7%	-41%	14%	3%	8%	10%	8%
Central Basin MWD	5%	7%	242%	14%	3%	8%	10%	8%
Compton	5%	3601%	162037%	14%	3%	8%	10%	8%
Eastern MWD	5%	7%	-23%	14%	3%	8%	10%	8%
Foothill MWD	5%	7%	-13%	14%	3%	8%	10%	8%
Fullerton	5%	8%	69%	14%	3%	8%	10%	8%
Glendale	5%	8%	3%	14%	3%	8%	10%	8%
Inland Empire	5%	7%	33%	14%	3%	8%	10%	8%
Las Virgenes MWD	5%	6%	-70%	14%	3%	8%	10%	8%
Long Beach	5%	7%	35%	14%	3%	8%	10%	8%
Los Angeles	5%	8%	37%	14%	3%	8%	10%	8%
MWDOC	5%	6%	-4%	14%	3%	8%	10%	8%
Pasadena	5%	6%	-23%	14%	3%	8%	10%	8%
SDCWA	-15%	-18%	-36%	-38%	-8%	-22%	-29%	-23%
San Fernando	5%	12%	10184%	14%	3%	8%	10%	8%
San Marino	5%	11%	24%	14%	3%	8%	10%	8%
Santa Ana	5%	9%	219%	14%	3%	8%	10%	8%
Santa Monica	5%	16%	120%	14%	3%	8%	10%	8%
Three Valleys MWD	5%	6%	-29%	14%	3%	8%	10%	8%
Torrance	5%	7%	-25%	14%	3%	8%	10%	8%
Upper San Gabriel	5%	0%	84%	14%	3%	8%	10%	8%
West Basin MWD	5%	6%	-39%	14%	3%	8%	10%	8%
Western MWD	5%	7%	18%	14%	3%	8%	10%	8%
Total MWD	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**	**0%**

100% Transportation, Alt #1, #2, 100% Supply, Short Term MC and Variable Costs based on average sales and/or transactions from FY 2015 to FY 2019.

Estimated 2021 Member Agency Impacts vs Prior Water Stewardship Rate

Thousand of Dollars

	Raftelis Financial Consultants			Rate Refinement Workgroup				
	Alt #1	Alt #2	Alt 3B Population	100% Supply	Variable Cost	Short Term MC – Tier 2	Short Term MC – Drought	Short Term Marginal Cost Historical Drought
Anaheim	$ 47	$ 83	$ 1,049	$ 118	$ 26	$ 68	$ 90	$ 73
Beverly Hills	35	43	(408)	86	19	50	66	54
Burbank	48	32	(315)	120	26	69	91	74
Calleguas MWD	305	383	(2,289)	761	166	438	580	473
Central Basin MWD	131	158	5,833	326	71	188	249	203
Compton	0	11	483	0	0	0	0	0
Eastern MWD	308	374	(1,325)	768	168	442	585	478
Foothill MWD	27	35	(65)	67	15	39	51	42
Fullerton	23	35	292	57	12	33	44	36
Glendale	52	72	26	129	28	74	98	80
Inland Empire	185	236	1,121	461	101	265	352	287
Las Virgenes MWD	67	80	(858)	166	36	96	127	103
Long Beach	101	124	643	252	55	145	192	157
Los Angeles	842	1,208	5,741	2,098	459	1,207	1,599	1,305
MWDOC	705	778	(550)	1,757	384	1,011	1,339	1,093
Pasadena	62	74	(263)	154	34	89	118	96
SDCWA	(3,993)	(4,791)	(9,427)	(9,945)	(2,174)	(5,721)	(7,581)	(6,187)
San Fernando	0	0	128	0	0	0	0	0
San Marino	3	6	14	8	2	4	6	5
Santa Ana	30	48	1,205	75	16	43	57	46
Santa Monica	12	36	269	30	7	18	23	19
Three Valleys MWD	209	234	(1,109)	520	114	299	397	324
Torrance	52	66	(237)	129	28	74	99	81
Upper San Gabriel	136	(5)	2,088	338	74	194	258	210
West Basin MWD	385	397	(2,787)	958	209	551	730	596
Western MWD	227	285	741	566	124	326	432	352
Total MWD	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

100% Transportation, Alt #1, #2, 100% Supply, Short Term MC and Variable Costs based on average sales and/or transactions from FY 2015 to FY 2019.

Next Steps

- Metropolitan's robust DM programs have been enormously successful and have helped build Southern California's current high degree of water reliability and resilience.
- The successful implementation of DM has been cost effective and reduced the need for Metropolitan to spend on more costly infrastructure and supplemental water resources.
- Continuing these successful programs will require adoption of a funding mechanism before the existing funding runs out in FY2022/23.
- Staff seeks board direction to bring back DM cost recovery options for approval to incorporate into the FY2022/23 and FY2023/24 Budget.


THE METROPOLITAN WATER DISTRICT OF
SOUTHERN CALIFORNIA
1928