

#### MWDOC - Joint Board Workshop

### Review Draft FY 2023/24 Long-Range Finance Plan Needs Assessment

Sep 6, 2023

### **Integrated Planning Processes**



# 2020 IRP Needs Assessment Scenarios

#### **Scenario Descriptions**

#### **Scenario A – Low Demand/Stable Imports:**

Gradual climate change impacts, low regulatory impacts, and slow economic growth.

#### **Scenario B – High Demand/Stable Imports:**

Gradual climate change impacts, low regulatory impacts, high economic growth.

#### **Scenario C** – Low Demand/Reduced Imports:

Severe climate change impacts, high regulatory impacts, slow economic growth.

#### **Scenario D** – High Demand/Reduced Imports:

Severe climate change impacts, high regulatory impacts, and high economic growth.



Summary Matrix of IRP Scenario Results\*

### 2020 IRP Needs Assessment Scenarios



### **Projected Water Demands**



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# Resource Portfolios Example

### IRP Scenario D



	Additional storage: 0 AF		Additional storage: 250 TAF		Additional storage: 500 TAF	
	Storage	Core Supply	Storage	Core Supply	Storage	Core Supply
2025	0 TAF	100 TAF	23 TAF	100 TAF	45 TAF	100 TAF
2026	0 TAF	150 TAF	45 TAF	150 TAF	91 TAF	150 TAF
2027	0 TAF	150 TAF	68 TAF	150 TAF	136 TAF	150 TAF
2028	0 TAF	150 TAF	91 TAF	150 TAF	182 TAF	150 TAF
2029	0 TAF	150 TAF	114 TAF	150 TAF	227 TAF	150 TAF
2030	0 TAF	150 TAF	136 TAF	150 TAF	273 TAF	150 TAF
2031	0 TAF	300 TAF	159 TAF	200 TAF	318 TAF	200 TAF
2032	0 TAF	300 TAF	182 TAF	200 TAF	364 TAF	200 TAF
2033	0 TAF	300 TAF	205 TAF	200 TAF	409 TAF	200 TAF
2034	0 TAF	300 TAF	227 TAF	200 TAF	455 TAF	200 TAF
2035	0 TAF	300 TAF	250 TAF	200 TAF	500 TAF	200 TAF
2036	0 TAF	450 TAF	250 TAF	400 TAF	500 TAF	400 TAF
2037	0 TAF	450 TAF	250 TAF	400 TAF	500 TAF	400 TAF
2038	0 TAF	450 TAF	250 TAF	400 TAF	500 TAF	400 TAF
2039	0 TAF	450 TAF	250 TAF	400 TAF	500 TAF	400 TAF
2040	0 TAF	450 TAF	250 TAF	400 TAF	500 TAF	400 TAF
2041	0 TAF	650 TAF	250 TAF	550 TAF	500 TAF	500 TAF
2042	0 TAF	650 TAF	250 TAF	550 TAF	500 TAF	500 TAF
2043	0 TAF	650 TAF	250 TAF	550 TAF	500 TAF	500 TAF
2044	0 TAF	650 TAF	250 TAF	550 TAF	500 TAF	500 TAF
2045	0 TAF	650 TAF	250 TAF	550 TAF	500 TAF	500 TAF
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### Resource Portfolios Summary IRP Scenarios



Core Supply Needs in 2032						
	No Storage	250 TAF Storage (182 TAF storage in 2032)	500 TAF Storage (364 TAF storage in 2032)			
IRP A	0 TAF	0 TAF	0 TAF			
IRP B	50 TAF	30 TAF	30 TAF			
IRP C	15 TAF	15 TAF	15 TAF			
IRP D	300 TAF	200 TAF	200 TAF			

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## **Resource Unit Costs**

Resource	Range from sources	Modeled Unit Cost <sup>1</sup>
Core Supply <sup>2</sup>	Carlsbad Desal = \$2,975/AF Santa Barbara Desal = \$3,126/AF Venture Water Pure = \$3,266/AF	\$3,000/AF
Storage	DVL <sup>3</sup> = \$269/AF (\$3.8B @ 30yrs 4%, 800 TAF capacity) Chino Basin Storage Study <sup>4</sup> ~ \$275-325/AF	Annual cost = \$300/AF storage capacity
Flex Supply <sup>5</sup>	SWP Transfer = \$605/AF Yuba Accord Transfer = \$400/AF	\$600/AF

<sup>1</sup> 2023 unit costs are escalated at 3% to future costs

<sup>2</sup> From SDCWA publication dated February 2023, Santa Barbara Recycled Water Assessment Oct 2022 Staff Report

Ventura PW cost was estimated by Metropolitan staff assuming \$206 million in total capital costs, \$6.7 million in annual O&M costs, and \$18.2 million in grants, with the remaining capital costs funded from the EPA's WIFIA loan program at a rate of 2.5% for a 30-year term. Sources: 2019-Ventura-Water-Supply-Projects-Final-EIR (civicplus.com); 3069 (ca.gov). Prices were escalated to 2023 dollars from 2019 with 3% escalator.

<sup>3</sup> Annual financing cost per AF of capacity constructed based on project cost in today's dollars of \$3.8 billion. Assumes 30-year financing at 4%.

<sup>4</sup> Annual financing cost per AF of capacity constructed and projected annual O&M costs based on average of Chino Basin Storage Study options. Assumes 30-year financing at 4% for capital costs

<sup>5</sup> SWP and Yuba Accord transfers based on 2022 prices escalated to 2023 dollars.

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#### **Observations:**

- 1. Developing core supply to meet demands identified in IRP D will have the largest rate impacts.
- 2. The rate impact shown in IRP A results from lower water sales.

\*Increases in different rate elements may vary as a result of the cost-of-service allocation and cost recovery approach for each project. Impacts on a member agency will depend on how and when they take water. For example, the more a project is allocated to supply then the full-service water rate will increase higher than the price for SDCWA exchange agreement deliveries.

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### Effect of Adding Storage for IRP D Scenario

#### Overall Annual Rate Increases (%) 2025-2032\*



#### **Observations:**

To meet the projected water demand in IRP D, development of 200 TAF of core supply and 250 TAF of storage capacity has lower rate impacts (7.1%) than the no storage and 500 TAF storage options.

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### Sensitivity Analysis for Lower Demand

Plan for IRP D Resource Needs with 250 TAF Storage but realize the lower water demands from IRP A



#### **Observations:**

If water demand does not materialize as projected in IRP D and instead occurs as projected in IRP A, development of core supply and storage to meet projected demand in IRP D could result in substantially higher rates.

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### Net Shortage Assessment in 2020 IRP

Plan for IRPA (no additional resources developed) but experience the higher demands from IRPD.



- 1. Water supply shortages will incur economic costs
- 2. What level of resource development does the Board want to pursue in light of reliability, resilience, and affordability objectives?

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### Estimated Capital Investment Examples for IRP D Scenario by 2032

Resource D	evelopment	Ectimated Capital *		
Core Supply Storage Capacity				
200 TAF 250 TAF **		\$5.5 Billion – \$6.0 Billion		
Engineering	g challenge	Financial challenge		
1.5x PWSC completed by 2032	~1/3 of Diamond Valley Lake completed by 2032	<ul> <li>Available revenue bond capacity</li> <li>Cashflow constraints for debt coverage</li> </ul>		

\* Assumptions: \$3,000/AF for core supply (2023 \$), 50% costs from O&M \$300/AF for storage capacity (2023 \$), 0-50% costs from O&M Capital financing @ 4%, 30-yr, 2% debt issuance cost

\*\* 182 TAF in 2032

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### CAMP4W process Example of projects to consider

- Pure Water of Southern California Project
- Delta Conveyance Project
- Sites Reservoir
- PVID Land Purchases

# Can we meet the additional supply needs in IRP D with conservation?

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### Current Conservation Initiatives Most Utilized in 2022

Devices	Water Savings (GPD)	Life (Yrs)	Life AF Savings	Rebate	Rate (\$/AF)	2022 Quantity (Units)	Total Lifetime AF Savings	Total \$
	А	В	C = A x B / 892.74*	D	E = D / C	F	G = C x F	H = D x F
High Efficiency Nozzles	2.36	5	0.0132	\$2	\$152	22,312	295 AF	\$44,624
High Efficiency Washer	29.32	14	0.4598	\$85	\$185	11,762	5,408 AF	\$999,770
High Efficiency Toilets	9.37	20	0.2100	\$40	\$190	22,625	4,752 AF	\$905,000
Showerheads	3.76	5	0.0211	\$12	\$570	5,029	106 AF	\$60,348
Flow Control	7.50	10	0.0840	\$5	\$60	5,223	439 AF	\$26,115
Weather Based Irrigation Controller	36.99	10	0.4143	\$80	\$193	9,337	3,869 AF	\$746,960
Weather Based Controller by Station	15.98	10	0.1790	\$35	\$196	19,264	3,448 AF	\$674,240
Commercial Turf Replacement	0.12	30	0.0041	\$2	\$494	2,933,030	11,883 AF	\$5,866,060
Residential Turf Replacement	0.09	30	0.0032	\$2	\$631	3,814,405	12,081 AF	\$7,628,810
Rain Barrel	1.70	5	0.0095	\$35	\$3,676	2,452	23 AF	\$85,820
Total / Weighted Average					\$403 / AF		42,301	\$17,037,747

\*892.74 is conversion factor for GPD to AFY

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How much conservation is available and at what price?

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### Nature of Conservation Investment

Front-loaded expenditures for water savings over the lifetime

#### Example: Meeting IRP D core supply needs (300 TAF) with turf removal

- Assumes 300 TAF of conservation is available at \$4/sq ft (or ~\$1,000/AF of lifetime savings)
- Cumulative savings must grow by 37,500 AF/yr from 2025 2032 to meet 2032 target of 300 TAF
- \$1,000 saves 1 AF of water over the next 30 years, or 0.033 AF/year. \$30,000 saves 1 AF/yr for the next 30 yrs.
- To achieve 300 TAF of annual water savings by 2032, annual conservation expenditure would be ~\$1.1B/yr through 2032



#### Annual Expenditures and Water Savings for Turf Removal

# Nature of Conservation Investment ...cont.

Front-loaded expenditures for water savings over the lifetime

If the water demand are lower than the projected, or the water supply situation improves, MWD can adjust or remove the conservation program along the way.

#### **ORIGINAL CONSERVATION PLAN**



#### **ADJUSTED CONSERVATION PLAN**



# Mandatory Conservation Scenario

#### Mandatory conservation in response to long-term structural imbalance between supply and demand

#### **Scenario Assumptions**

- Assumes regulatory action mandating conservation
- No new resource development new supply or incentivized conservation
- Mandatory conservation is no cost to Metropolitan (\$0/AF in the model)
- Begin with projected demand in IRP D and reduce gradually to meet 2032 resource development goal 300 TAF



#### **Observations:**

- 1. Lowest rate impact as there is no financial cost to Metropolitan for mandatory conservation. However, member agencies and subagencies will incur compliance and enforcement costs.
- 2. What are the implications of mandatory conservation on economic growth and quality of life for region?

\*Increases in different rate elements may vary as a result of the cost-of-service allocation and cost recovery approach for each project. Impacts on a member agency will depend on how and when they take water. For example, the more a project is allocated to supply then the full-service water rate will increase higher than the price for SDCWA exchange agreement deliveries.

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### Projected 2032 Overall Rate by IRP Scenario

\$3,000 Overall Rate in 2032 (\$/AF) 128% \$2,500 73% 62% 54% 56% 54% \$2,000 \$1,500 \$1,000 \$500 \$0 **10-year forecast** Plan for IRP D, **IRP D, 250 TAF** IRP B, No Storage IRP C, No Storage from 2023/24 **IRP A, No Storage Observed IRP A** Storage **Budget** Demand **Core Supply** 30 TAF **15 TAF** N/A 200 TAF 200 TAF 0 N/A 182 TAF 182 TAF Storage 0 0 0 **IRP B IRP** C **Budget IRP** A IRP D IRP A Water Demand 1.58 MAF 1.46 MAF 1.35 MAF 1.24 MAF 1.66 MAF 1.24 MAF

Cumulative overall rate increase from 2024 adopted rate

\*Increases in different rate elements may vary as a result of the cost-of-service allocation and cost recovery approach for each project. Impacts on a member agency will depend on how and when they take water. For example, the more a project is allocated to supply then the full-service water rate will increase higher than the price for SDCWA exchange agreement deliveries. Draft FY 2023/24 Long-Range Finance Plan Needs Assessment

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### **Capital Financing Considerations**

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# Primary means of funding capital

	Benefits	Considerations
Grant Funding	• "Free" money often the cheapest form of funding	<ul> <li>Typically paid on a reimbursement basis</li> <li>Often contain a local-match requirement</li> <li>Federal grants may "federalize" the project receiving grant funds</li> </ul>
PAYGO Funding	<ul> <li>Flexible</li> <li>Avoids bond interest expense; but has an opportunity cost of investment earnings</li> <li>No contractual obligations with lenders</li> <li>Lowers rates over time</li> </ul>	<ul> <li>Project costs borne entirely by existing or past customers</li> <li>Project delivery delays may occur if insufficient PAYGO funding exists</li> </ul>
Debt Funding	<ul><li>Allows acceleration of future funds for project capital funding</li><li>Intergenerational equity</li></ul>	<ul><li>Cost of borrowing is interest</li><li>Contractual obligations to lenders</li><li>Reduced future flexibility</li></ul>

# Debt Financing Overview

Metropolitan has or can issue several types of debt:

- Revenue Bonds (primary means of debt financing)
- General Obligation Bonds (historically issued for SWP costs)
- Certificates of Participation (JPA financings and/or if Revenue Bond capacity is unavailable)

When issuing debt, Metropolitan takes into consideration several factors:

- Timing of when debt is needed
- Impact on credit ratings
- Current market interest rates
- Compliance with rate covenants and additional bonds tests
- Overall Metropolitan debt capacity

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### Next Steps for CAMP4W Process

- Determine what level of resource development the Board wants to pursue in light of resiliency, reliability, financial sustainability, affordability and equity objectives
- Further detailed study is recommended to understand capacity and price elasticity for conservation
- Evaluate rate impacts for specific projects and portfolios of projects to meet the board-approved reliability objectives

### **Updated LRFP Timeline**

- August 2023
  - Draft LRFP Needs Assessment introduced at FAIRP
- September 2023
  - Member Agency / Caucus Workshops
  - FAIRP: Draft LRFP Needs Assessment
  - Member Agency Manager CAMP Workshop (9/21)
  - CAMP4W workshop on LRFP & business model (9/26)
- October 2023
  - FAIRP: Draft LRFP Needs Assessment
- November 2023 & beyond
  - FAIRP: Draft LRFP Needs Assessment
  - Continued feedback loop with CAMP4W & finalize LRFP in FY 2024/25

LRFP Needs Assessment

