Subcommittee on Pure Water Southern California and Regional Conveyance

State Water Project Dependent Areas Drought Mitigation Update

Item 3d

November 28, 2023

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Subject

State Water Project Dependent Areas Drought Mitigation Update

Purpose

To provide updates on regional conveyance improvements and solutions and the integration of drought mitigation actions with CAMP4W

Next Steps

- Continue updates to Member Agency Manager Meetings
- Conduct MA Workshop #11 (December 12, 2023) to receive feedback on the proposed implementation plan
- Recommend resolution/actions at the Engineering, Operations, and Technology Committee Meeting (February/March 2024)

Presentation Outline

- Drought Mitigation Actions Update
  - Regional conveyance improvements under implementation
  - Proposed regional conveyance solutions for further development
  - Surface storage study update
- Incorporation of Drought Mitigation Actions into CAMP4W Portfolios
  - Examples of Drought Mitigation Portfolio and CAMP4W Portfolio
- Definition of Equitable Access
- Planned Board Resolution (February/March 2024) to Implement Drought Mitigation Actions Portfolio
- Next Steps

August 2022 Board Letter – Call to Action

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

BOARD ACTION

- **Board of Directors**
  Water Planning and Stewardship Committee

8/16/2022 Board Meeting

7-13

Subject

Adopt resolution affirming Metropolitan's call to action and commitment to regional reliability for all member agencies; the General Manager has determined that the proposed action is exempt or otherwise not subject to CEQA

Executive Summary

The Metropolitan Water District of Southern California endeavors to provide an adequate and reliable supply of high-quality water to meet the region's present and future needs in an environmentally and economically responsible way. As an example from 1930, Metropolitan's first Board Chair, W.P. Whitsett, provided a guiding principle for developing regional water supply reliability: "Whatever is done should be done for the benefit of the whole, and whatever is done for the benefit of the whole should be shared by all the parts."

Nearly a century after those aspirational words, a record-breaking drought has descended on the Southwest, and Southern California's water reliability is in crisis. This year, supply from the State Water Project (SWP) was cut to 5 percent of Metropolitan's total allocation for the second consecutive year—resulting in a 3-year water supply substantially below the California Department of Water Resources' worst-case projection. These conditions starkly highlight an infrastructure and water supply vulnerability that must now be addressed. Simply put, there is not enough pipeline connectivity or operational flexibility for imported supply and existing regional storage to meet the needs of six member agencies with a combined population greater than six million.

Because of this supply shortage and limits to its infrastructure, Metropolitan cannot provide equivalent supply reliability from one corner of the service area to another. In response, Metropolitan's Board declared a water shortage emergency and imposed a water conservation program in April of this year for the six SWP-dependent agencies. The impacted agencies include Calleguas Municipal Water District, Inland Empire Utilities Agency (IEUA), Las Virgenes Municipal Water District, the City of Los Angeles, Three Valleys Municipal Water District, and Upper San Gabriel Valley Municipal Water District.

These six SWP-dependent agencies have limited connection to Metropolitan's existing infrastructure, storage, and supplies. This constraint forced them to take mandatory and painful water supply cuts from their expected SWP use by an average of 35 percent—with some facing reductions up to 73 percent. If these agencies cannot limit their use of Metropolitan's supply from the SWP, then they face stiff volumetric penalties of $2,000 per acre-foot (AF) or the first-ever total ban on outdoor irrigation. Meanwhile, under statewide regulation, the 20 member agencies outside of this area must implement demand-reduction actions under Level 2 of their Water Shortage Contingency Plans. These actions are locally determined to achieve only a 10 to 20 percent water reduction (without volumetric penalties).

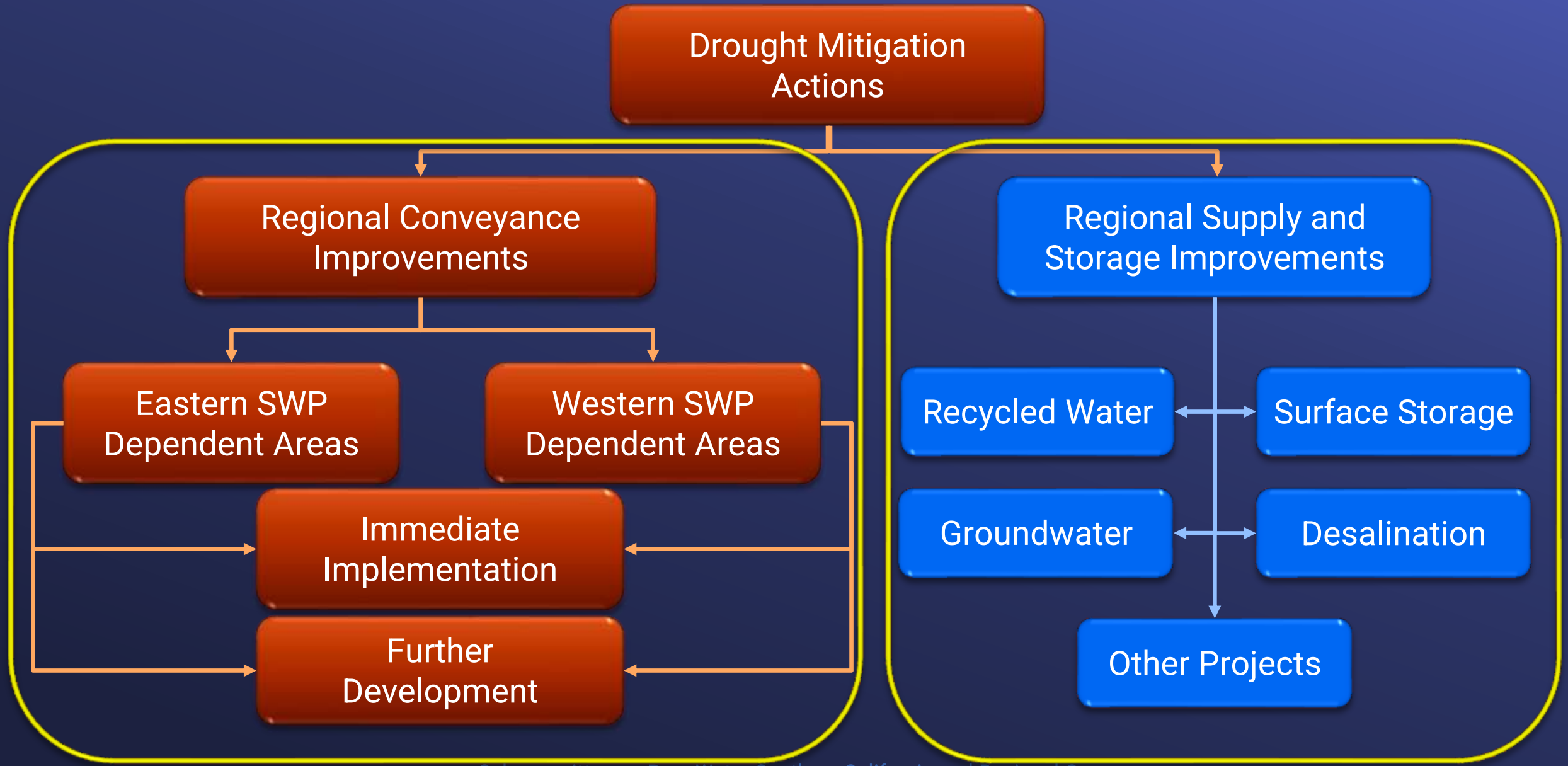
This disparity is unacceptable to Metropolitan and its member agencies. By adopting the proposed Resolution in Attachment 1, the Board would prioritize a policy to provide 100 percent and equitable reliability to all member agencies. Metropolitan would thus commit to taking all necessary actions to give the SWP-dependent member agencies a level of infrastructure and water supply reliability equivalent to that of Metropolitan's other member agencies. Equitable access will be achieved through the expedited and prioritized implementation of a balanced set of projects and programs that improve existing infrastructure, imported and local supplies, and demand management.

Call to Action

Metropolitan commits to ensuring equitable access to supply and storage assets by building infrastructure, increasing local supply availability, expanding partnerships, and advancing water use efficiency.

- ***All member agencies must receive equivalent water supply reliability through an interconnected and robust system of supplies, storage, and programs.***
- ***Metropolitan will reconfigure and expand its existing portfolio and infrastructure to provide sufficient access to the integrated system of water sources, conveyance and distribution, storage, and programs to achieve equivalent levels of reliability to all member agencies.***
- ***Metropolitan will eliminate disparate water supply reliability through a One Water integrated planning and implementation approach to manage finite water resources for long-term resilience and reliability, meeting both community and ecosystem needs.***[23]

Draft Drought Mitigation Actions Portfolio



Regional Conveyance Improvements under Implementation

Project	Capacity	Estimated Cost	Planned Board Action	Anticipated Completion	Status
Wadsworth Bypass	Up to 120 cfs 87 TAF	$23 M	N/A	2025	In construction
Inland Feeder-Rialto Pipeline Intertie		$23 M	N/A	2025	In construction
IF/ Badlands Tunnel Surge Protection Facility		$26 M	N/A	2025	In construction
Foothill Pump Station Intertie		$26 M	Fall 2024	2026/2027	In final design (two-stage construction)
Sepulveda Feeder Pumping Project - Phase 1	Up to 60 cfs* 42 TAF	$120 M	Fall 2024	2026	Progressive design-build contract awarded
Shift of Burbank B-5 Supply to B-5A	Up to 7 cfs 5 TAF	$7 M	Mid 2024	2026	Feasibility study completed
TVMWD Miramar Pumpback Upgrade	Up to 30 cfs 21 TAF	$5M	TBD	TBD	Feasibility study

*Capacity includes 30 cfs pump station capacity and 30 cfs water savings that would otherwise be delivered into the common pool to maintain water quality

Proposed Regional Conveyance Solutions for Further Development

- Hybrid approach to combine raw and treated water alternatives
- Lower-bound solution provides flow capacity to meet equitable access/reliability commitment
  - Ensure SWPDA agencies have access to available flow
  - Prevent geographic-specific allocations
- Upper-bound solution provides flow capacity to enhance regional reliability
  - Allow SWPDA agencies access to new supply sources
  - Improve flexibility and resilience by allowing both surplus and drought operations
  - Meet estimated high-period demand during SWP supply shortage

Hybrid Solution – Lower Bound

Supply by Individual Project

Total Flow	Total Volume
415+ CFS	415+ TAF

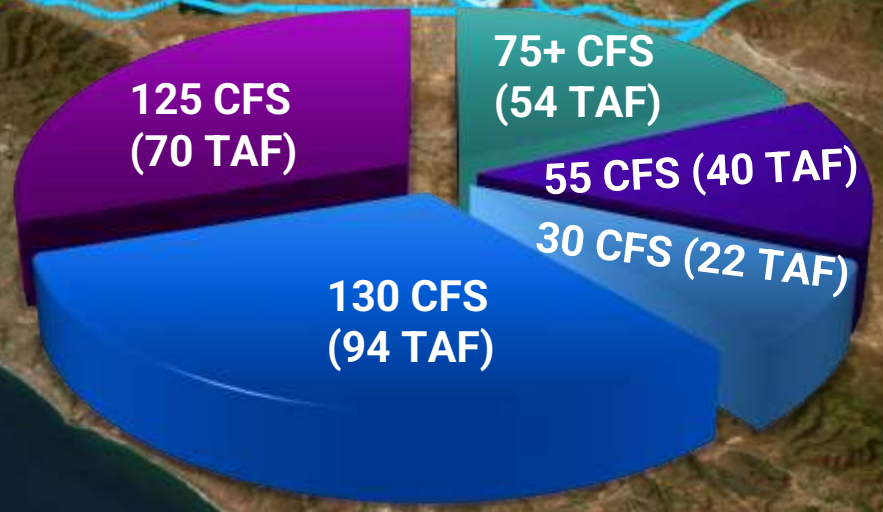
AVEK Conveyance to the West Branch

Jensen WTP (Existing)

Greg Avenue Pump Station (Existing)

Sepulveda Feeder Pumping Phase 1 (In Progress)

Sepulveda Feeder Pumping Phase 2



Project	Est. Capital Cost	Est. Completion Date
Sepulveda Feeder Pumping Phase 2	$300M	2032
AVEK Conveyance to the West Branch	$190M	2035

Hybrid Solution – Upper Bound

Supply by Individual Project

Total Flow	Total Volume
590+ CFS	590+ TAF

AVEK Storage to the East Branch (In Progress)

Greg Avenue Pump Station (Existing)

E/W Raw Water Conveyance Line

Jensen WTP (Existing)

Sepulveda Feeder Pumping Phase 1 (In Progress)

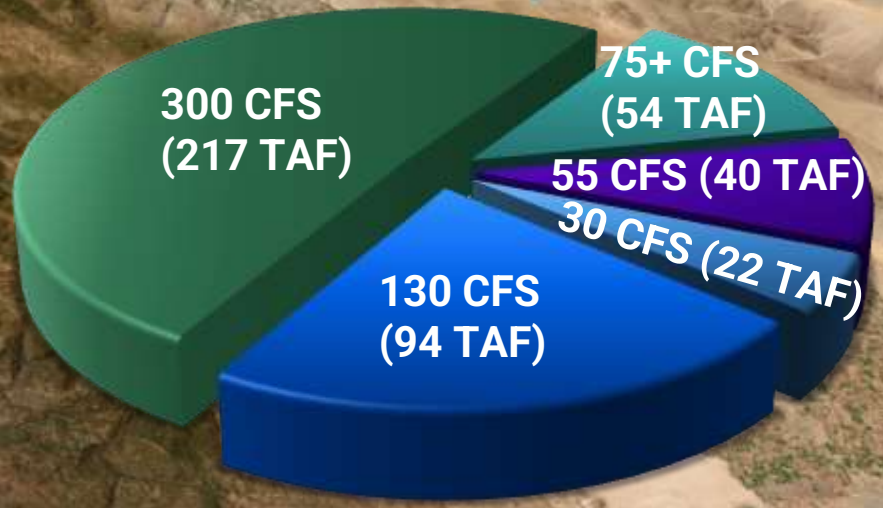
Sepulveda Feeder Pumping Phase 2

Operation Next (Hyperion)

PWSC

Lake Mathews

DVL



Project	Est. Capital Cost	Est. Completion Date
Sepulveda Feeder Pumping Phase 2	$300M	2032
E/W Raw Water Conveyance Line	$6,200M	2040

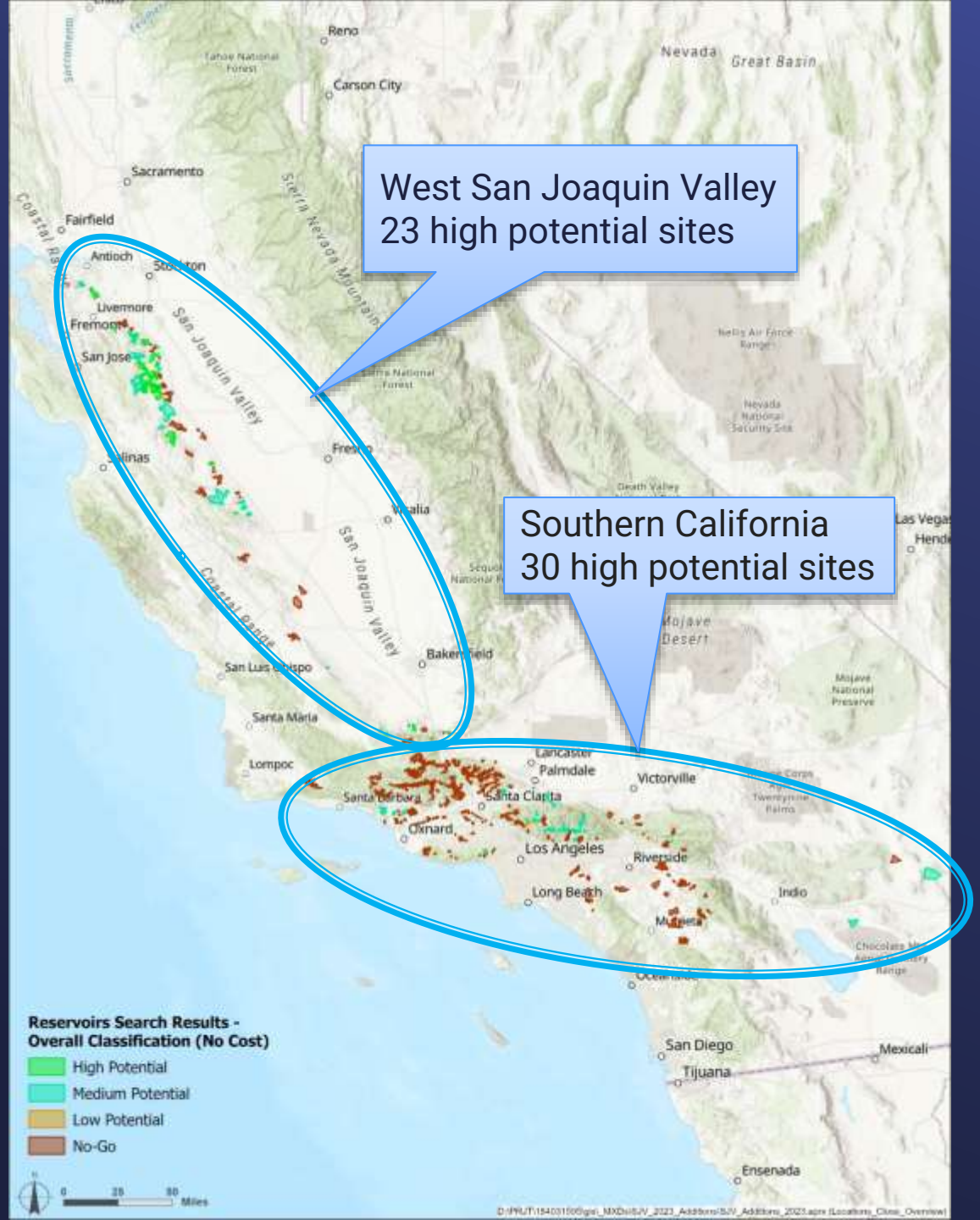
Conveyance Options Summary Slide

System Flexibility Options	Projects	Potential Sources of Supply	Supply To SWPDA* (cfs)	Estimated Cost ($M)
1	Sepulveda Pump Project Phase 2 AVEK to West Branch	CRA, DVL from Common Pool; PureWater (via Weymouth); AVEK	415+	$490
2	Sepulveda Pump Project Phase 2 East-West Conveyance (Raw)	CRA, DVL from Common Pool; PureWater; AVEK; Operation Next	590+	$6,500

*Includes 160+ cfs baseline supply from Greg Avenue Pump Station (55 cfs), Sepulveda Feeder Pump Project Phase 1 (30 cfs) and Jensen (75+ cfs)

Surface Storage Study Update

- Benefits of flexibility improvements diminish over long-term without additional supply to meet growing demand
- Storage is key to securing Southern California's future
- IRP finding on storage:
  - Expanding existing or developing new storage programs and investments in Metropolitan's distribution system can reduce the need for new core supply development to meet potential future shortages and adapt to climate change.



Surface Storage Study

Phase 1: Complete

Develop an inventory of potential surface storage options for further consideration and propose evaluation criteria

- Member Agencies input
- 300+ sites identified
- Classified based on
  - Location & capacity
  - Geological/geotechnical
  - Institutional (partnership possibility)

Phase 2: Ongoing

- Conduct a spatial analysis
- Refine evaluation criteria
- Create a short list of sites

Effects of Storage on Regional Conveyance Solutions

- Lower-bound conveyance hybrid solution provides a CONSTANT flow of 415 cfs
- An East-West conveyance needs to provide 185 cfs to reach the 600 cfs Western SWPDA contemplated capacity (upper bound)
- Upper-bound solution provides regional benefits beyond the SWPDA needs
  - A 300 cfs raw water transmission line was proposed to capitalize on the benefits (bi-directional conveyance and access to new recycled water supplies)
- A surface storage facility (100 to 150 TAF) benefiting Western SWPDA can provide about 185 cfs of flow
- Storage has the potential to prevent geographic-specific allocations

Hybrid Solution + Storage
Supply by Individual Project

Total Flow	Total Volume
600+ CFS	680+ TAF

Additional Storage

AVEK Conveyance to the West Branch

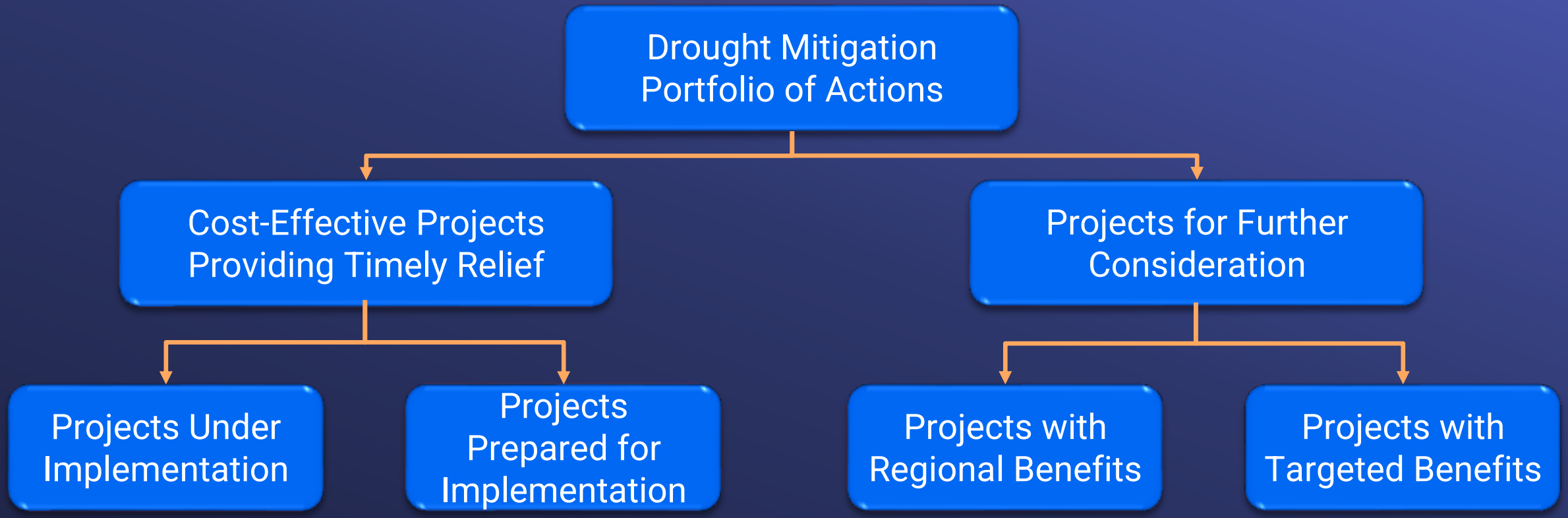
Greg Avenue Pump Station (Existing)

Jensen Minimum Operational Flow (Existing)

Sepulveda Feeder Pumping Phase 1 (In Progress)

Sepulveda Feeder Pumping Phase 2

Drought Mitigation Actions Portfolio



Drought Mitigation Actions Portfolio
Cost-Effective Projects Providing Timely Relief (for Implementation)

Eastern SWP Dependent Area

Status	Project	Capacity (cfs)	Cost
Board Approved	DVL to Rialto	Up to 120	$98M
For CIP Inclusion	TVMWD Miramar Pump System Upgrades	Up to 30	TBD
		Up to 150	**$98+M**

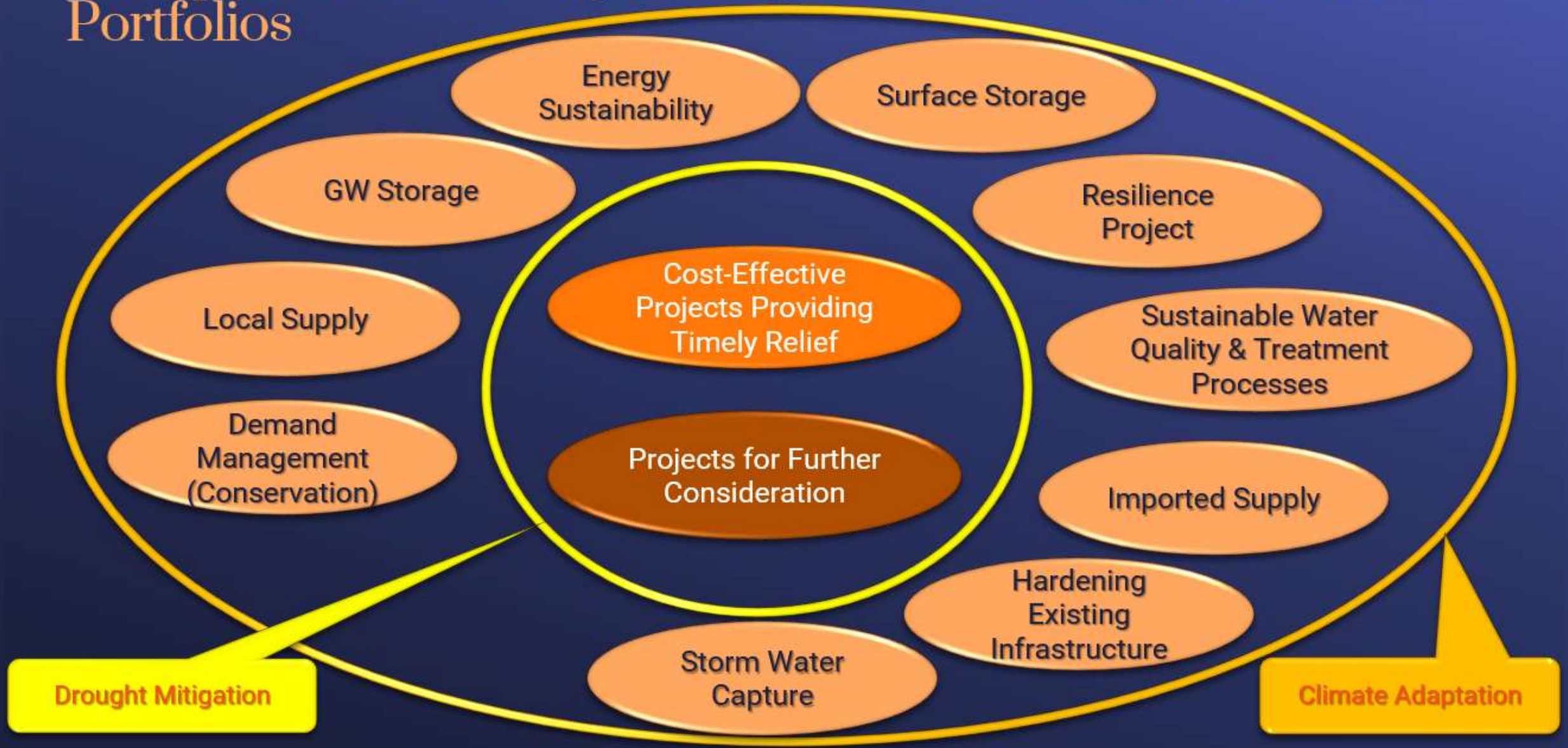
Western SWP Dependent Area

Status	Project	Capacity (cfs)	Cost
Board Approved	Sepulveda Feeder Pump Project Phase 1	Up to 30	$120M
For CIP Inclusion	Burbank B-5 to B-5A Shift	Up to 7	$7M
For CIP Inclusion	Sepulveda Feeder Pump Project Phase 2	Up to 130	$300M
		Up to 167	**$427M**

Drought Mitigation Actions Portfolio Projects for Further Consideration (CAMP4W Decision Framework)

	Type of Project	Project Title	Capacity	Estimated Cost
Projects with Targeted Benefits	**Conveyance:** AVEK to Jensen Exclusive	AVEK Conveyance to West Branch	Up to 125 cfs 70 TAF	$190M
	Storage: In-Region Surface Storage Benefiting SWPDA Directly	Western SWPDA Reservoir	100-300 TAF	$9,000/AF
	Conveyance: Treated water	West Valley Feeder Parallel Pipeline	135 cfs	$3,000M
	Storage: In-Region Groundwater Storage	Local Supply Augmentation	0-4,000 TAF	TBD
Projects with Regional Benefits	**Conveyance:** Regional	E-W Raw Water Conveyance (Foothill Alignment)	300 cfs	$6.2B
	Storage: Surface Storage w/ Regional Benefit	SWP Storage - East San Joaquin Valley	500-750 TAF	$9,000/AF
	Storage: Flex Storage w/ Regional Benefit	SWP Lakes, Federal Programs, etc.	50-250 TAF	TBD
	Storage: Groundwater and Exchanges (out of region)	AVEK Water Bank Phase 2	100 TAF	TBD
	Supply: New Supply	Recycled Water, Desalination	TBD	TBD

Incorporation of Drought Mitigation Actions into CAMP4W Portfolios



Example of Drought Mitigation Portfolio & CAMP4W Portfolio

Drought Mitigation Portfolio **Example**

- Conveyance Improvements
  - Hybrid Lower Bound
- Storage
  - Expand Castaic Lake
- Operational Strategy
  - Increase emergency storage (San Luis Reservoir)

CAMP4W Portfolio **Example**

- Drought Mitigation Portfolio
- DVL Pump Storage (energy)
- Eagle Valley Reservoir (seismic)
- West San Joaquin Valley Reservoir
- Reinforce portion of OC Feeder (sea rise) (hardening)
- Develop GW storage programs
- Pure Water (recycled water)
- Other actions or projects

Definition of Equitable Access (Draft)

Member Agencies have adequate access to Metropolitan's supply and storage assets and programs to provide uniform water supply reliability to prevent geographic-specific disparity, with a fully operating infrastructure.

Planned Board Resolution (February/March 2024) to Implement Drought Mitigation Actions Portfolio

- Board resolution to enact recommended implementation plan
  - Authorize actions to add projects for immediate implementation
  - Reconfirm commitment to equitable supply reliability by developing long-term projects to be evaluated in CAMP4W process
- Board actions required to:
  - Create a new CIP program to include selected drought mitigation projects
  - Amend current CIP to include:
    - Sepulveda Feeder Pumping Phase 2 (160 cfs ultimate capacity)
    - Removing network constraints (e.g. Inglewood Lateral upgrade)

Reconfirm Commitment

- Inform CAMP4W decision-making framework to identify a sustainable long-term solution
  - Continue developing raw water components of the East-West Conveyance Improvements
    - Quantify the benefits
    - Verify feasibility
    - Refine alignments
    - Determine capacity
  - Continue with the alternative selection process for surface water storage and the Phase II analysis
  - Evaluate proposed projects and portfolios in the CAMP4W decision-making framework
    - Allows us to explore the problem holistically
    - Explore options for conveyance, storage, etc., and determine what is best for the region

Next Steps

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- Conduct MA Workshop #11 (December 12, 2023) to receive feedback on the proposed implementation plan
- Recommend resolution/actions at the Engineering, Operations, and Technology Committee Meeting (February/March 2024)


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1928