



The Southern California Water Dialogue

Update on Surface Water Storage Study

May 28, 2025

The Southern California Water Dialogue

Surface Water Storage Study Update

Subject

- Surface Water Storage Study Update

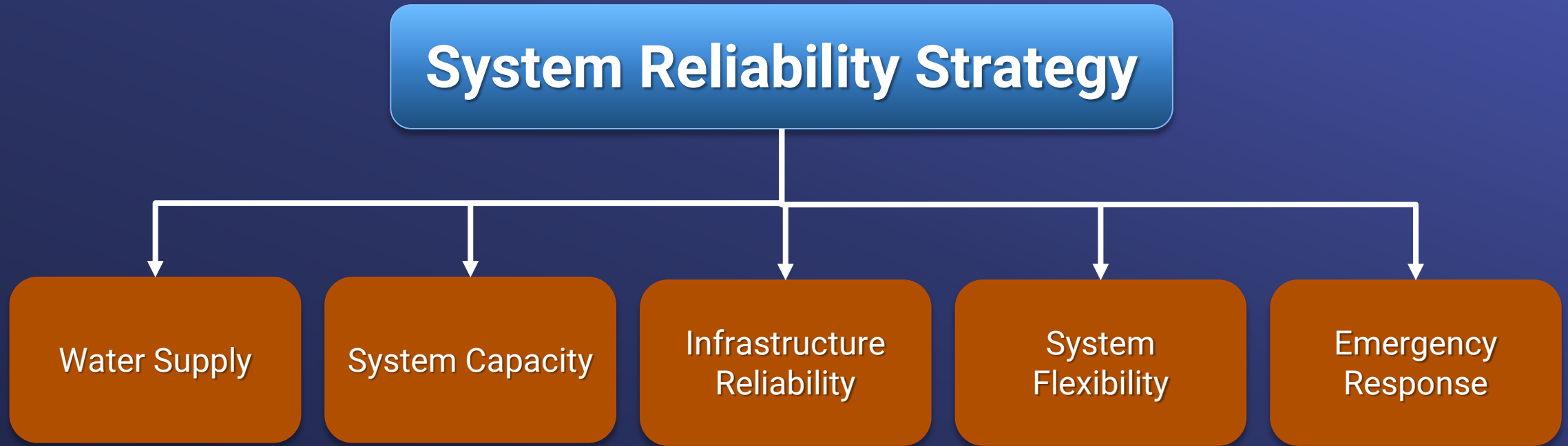
Purpose

- Provide a background of Metropolitan's System Reliability Strategy
- Review progress to date on the Surface Water Storage Study and outline planned work

Next Steps

- Initiate Phase 3 of the Surface Water Storage Study

System Reliability Strategy



- Developed as part of the 2007 Integrated Area Study
- Collaborative effort between Metropolitan and member agencies
- Resilience is a component of Metropolitan's System Reliability Strategy

System Reliability Strategy

System Reliability Strategy

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graph TD; A[System Reliability Strategy] --> B[Water Supply]; A --> C[System Capacity]; A --> D[Infrastructure Reliability]; A --> E[System Flexibility]; A --> F[Emergency Response];
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Water Supply

Develop and maintain an adequate water supply portfolio to meet full-service retail demands under all foreseeable hydrologic conditions

System Capacity

The ability to convey, treat, and distribute supplies to meet firm demands under peak condition

Infrastructure Reliability

Maintain facilities in state of readiness to ensure system deliveries

System Flexibility

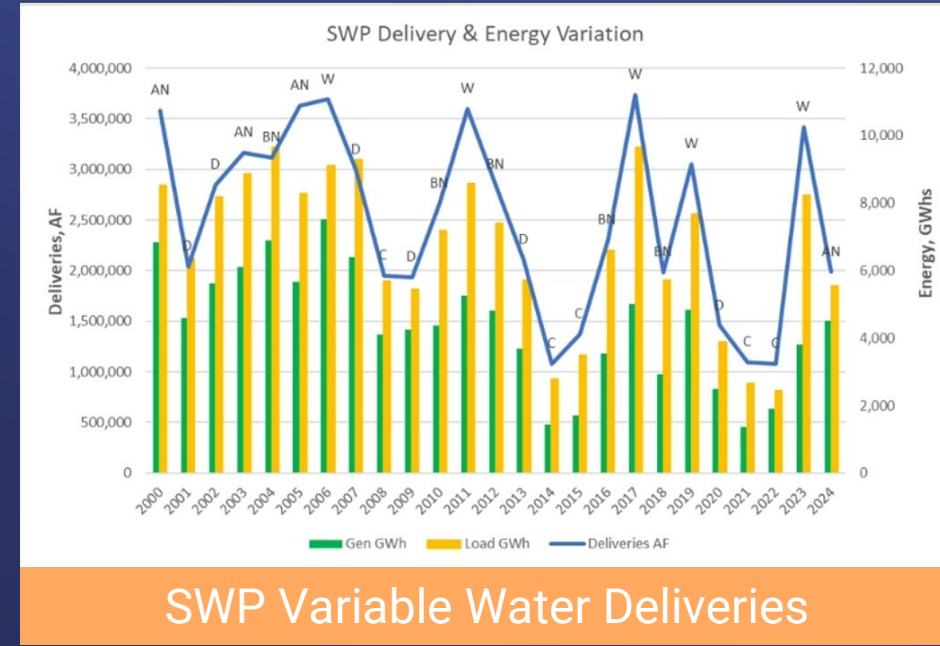
Respond to short-term changes in water supply, water demands, and water quality; and meet member agency needs during planned or unplanned outages

Emergency Response

The ability to respond to unplanned outages and restore service as quickly as practical.

Surface water storage as a critical component of both the resilience and reliability of the region's water supply system

- Buffer Against Drought and Climate Variability
 - Surface storage allows Metropolitan to capture and hold water during wet years for use during dry ones, increasing system flexibility
- Enhancing Supply Reliability
 - Metropolitan's integrated resources strategy relies on surface storage to balance peaks and valleys in both supply and demand
- Operational Flexibility and Emergency Preparedness
 - Surface storage provides operational resilience by allowing MWD to adjust water deliveries depending on system constraints



Surface water storage as a critical component of both the resilience and reliability of the region's water supply system

- Support for Environmental and Regulatory Requirements
 - Surface storage also allows MWD to manage flow timing and maintain water quality standards required for environmental protection, especially in relation to Delta operations
 - Holding water gives more control over when and how much water is released downstream, supporting compliance with environmental regulations
- Complement to Groundwater and Recycled Water
 - Surface water storage is complementary to other storage and supply strategies, including groundwater banking and investments in recycled water projects like the Regional Recycled Water Program
 - Together, these provide a layered defense against supply disruption

Strategic Perspective

- Metropolitan's 2020 Integrated Water Resources Plan (IRP)
 - Emphasizes an "adaptive management approach" that prioritizes surface storage to manage uncertainty
 - Surface storage is framed not just as a supply tool, but as a resilience strategy in a time of increasing hydrologic volatility.

Resilience - The ability of Metropolitan to recover from stress



Drought: Stream Bed @ Parker Dam

Hazards:

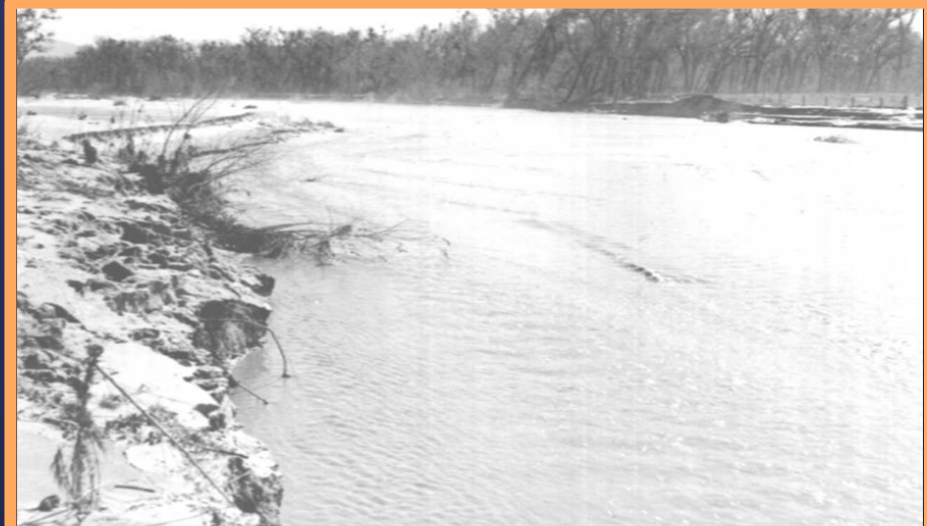
- Earthquake
- Drought
- Wind
- Wildfire
- Flood
- Technical & Human-Caused Hazards
- General & Unanticipated Events



Earthquake: Jensen 1971



Fire: Diemer 2008



Flood: West Portal of San Jacinto Tunnel

Drivers, Objectives, & Approach

- **Drivers**

- Highly variable State Water Project (SWP) supply conditions
- Challenges to mitigate severe droughts & manage excessive surplus
- Core supply identified as a time-bound target in CAMP4W annual report

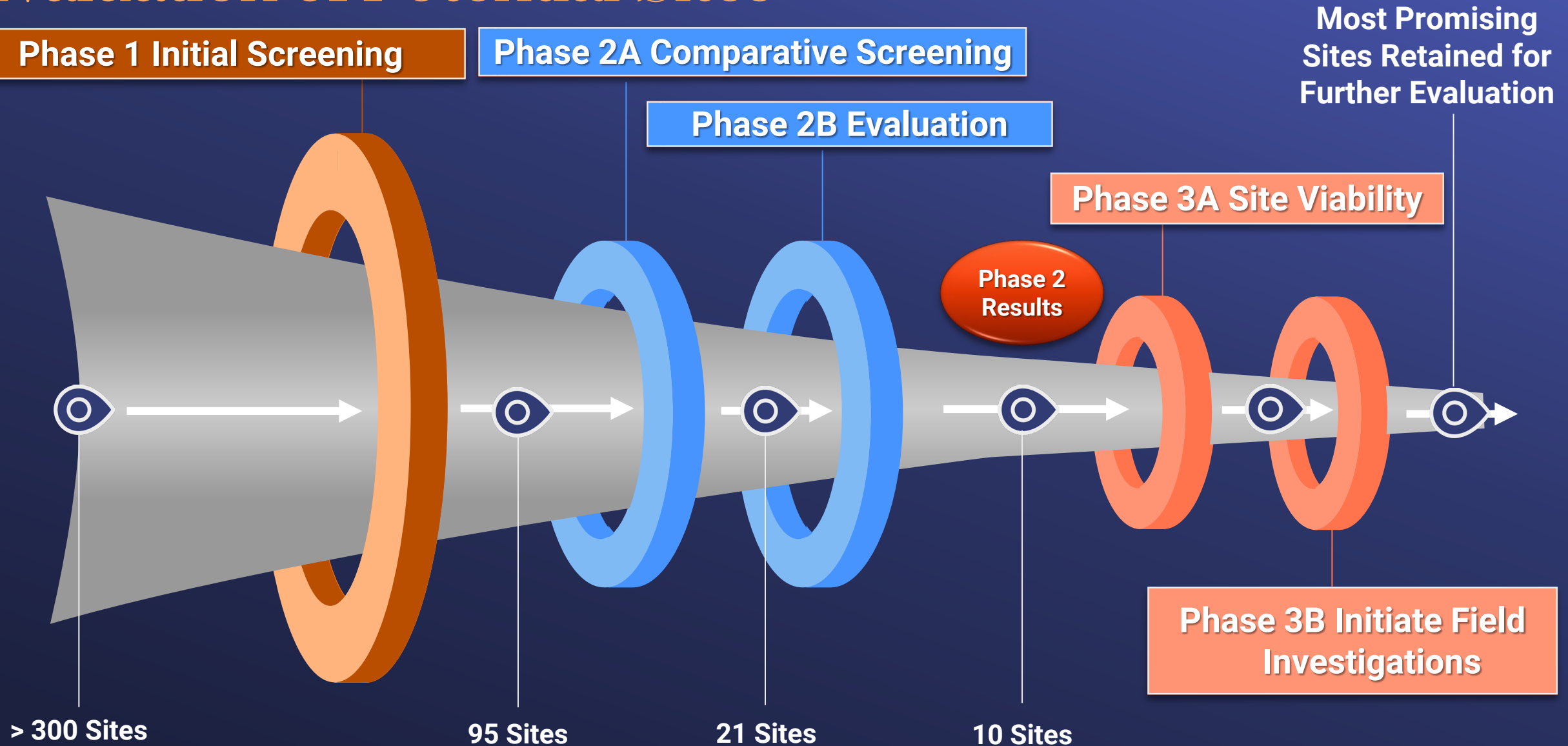
- **Objectives**

- Improve SWP supply reliability
- Enhance regional resilience
- Incorporate climate adaptation to align with CAMP4W objectives

- **Study Approach**

- Phase 1 – inventory & screening - *completed*
- Phase 2 – comprehensive evaluation - *completed*
- Phase 3 – site-specific assessment - *next step*

Evaluation of Potential Sites



Phase 2B Evaluation Process



Category	Key Criteria/Metrics
Facility Characteristics	- Storage efficiency & potential for sediment inflow - Facility relocations
Water Quality	- Inflow water quality - Risks of stored water impairment
System-Wide Considerations	- Contribution to storage objective - Operational flexibility
Constructability	- Capital cost per acre-foot of storage capacity - Construction risk/complexity
Geologic Risk	Seismicity, liquefaction & landslide risk
Environmental Risk	Environmental compliance risk & complexity
Climate Adaptability & Reliability	- Pumped storage potential - Seismic resilience, fire & heat risk
Critical Risks	- Dam height constraints - Relocations, site hazards

Phase 2B Evaluation Results

Site Scoring & Ranking

- Detailed site evaluation using consistent methodology & criteria
- Each criterion scored from 1 (least favorable) to 5 (most favorable)
- Site rankings developed from scores:
 - Technical & non-technical criteria
 - North & South of East Branch/West Branch Bifurcation

Site Name	Storage Capacity (TAF)	Water Source Name	Non-Technical Criteria										Technical Criteria										CA			
			Facility Characteristics		Water Quality	System-Wide Considerations			Construction Risk and Uncertainty	Environmental Risk and Uncertainty	Climate Adaptability and Reliability		Facility Characteristics		Water Quality	Construction Risk and Uncertainty	Geologic Risk and Uncertainty									
			Reservoir Rehabilitation	Keynotes in Literature	Water Quality in Reservoir	Operational Reliability	Proximity to Sensitive Areas	Proximity to Protected Resources	Compliance with Federal and State Regulations	Compliance with Federal and State Regulations	Compliance with Federal and State Regulations	Compliance with Federal and State Regulations	Compliance with Federal and State Regulations	Compliance with Federal and State Regulations	Compliance with Federal and State Regulations	Compliance with Federal and State Regulations	Compliance with Federal and State Regulations	Compliance with Federal and State Regulations	Compliance with Federal and State Regulations							
North of CAA East Branch/West Branch Bifurcation																										
Ingram Creek	300	SWP - CAA	4.0	4.3	4.4	5.0	4.0	2.5	5.0	3.0	4.3	4.0	3.0	2.0	2.0	3.0	4.5	4.3	4.0	4.0	4.3	3.0	3.0	2.0	2.0	2.0
Del Puerto Creek Large	330	SWP - CAA	3.0	4.5	1.0	5.0	3.9	2.7	5.0	2.0	4.6	1.0	1.0	2.0	2.0	3.0	4.7	4.7	2.0	5.0	4.0	4.3	5.0	5.0	2.0	2.0
Del Puerto Creek	420	SWP - CAA	1.0	4.4	4.8	5.0	3.5	3.4	4.0	2.0	4.4	2.0	2.0	2.0	2.0	3.0	4.5	4.5	4.0	4.0	4.4	3.0	5.0	5.0	2.0	2.0
Crow Creek	130	SWP - CAA	5.0	4.2	3.7	5.0	4.7	1.3	4.0	2.0	4.1	4.0	1.0	2.0	1.5	3.0	4.3	4.2	2.0	4.0	4.2	3.0	5.0	5.0	2.0	2.0
Lower Garzas Creek	334	SWP - CAA	4.0	4.4	3.7	5.0	3.8	2.7	4.0	2.0	5.0	3.0	2.0	2.0	2.0	3.0	4.6	5.0	4.0	5.0	4.4	3.0	1.0	3.0	2.0	4.0
Lower Garzas Creek Large	646	SWP - CAA	4.0	4.6	4.4	5.0	2.5	1.0	4.0	2.0	4.6	3.0	2.0	2.0	2.1	3.0	4.7	4.5	5.0	5.0	4.6	3.0	1.0	3.0	2.0	4.0
Upper Quinto Creek	500	SWP - CAA	5.0	4.6	5.0	5.0	3.2	3.9	4.0	3.0	4.2	2.0	3.0	2.0	3.0	3.0	4.6	4.2	5.0	5.0	4.0	4.7	2.0	1.0	5.0	2.0
Middle Salt Creek	97	SWP - CAA	2.0	2.4	4.8	5.0	5.0	1.0	5.0	3.0	4.9	1.0	2.0	2.0	1.1	2.0	2.6	4.8	2.0	4.0	4.0	2.2	4.0	1.0	3.0	1.0
Kettleman Plain	97	SWP - CAA	3.0	1.0	1.7	5.0	4.7	1.0	2.0	3.0	4.6	3.0	3.0	2.0	4.0	3.0	1.0	4.5	1.0	5.0	2.0	1.0	5.0	5.0	2.0	1.0
Sunflower Valley	339	SWP - CAA	1.0	2.3	3.5	5.0	3.4	2.8	2.0	3.0	5.0	3.0	3.0	2.0	1.5	3.0	2.3	4.9	2.0	4.0	1.0	2.1	5.0	4.0	2.0	5.0
Pinto Creek	467	SWP - CAA	5.0	5.0	3.5	4.0	1.0	3.7	3.0	3.0	1.5	2.0	2.0	3.0	3.0	3.0	5.0	1.7	4.0	5.0	4.0	5.0	1.0	4.0	2.0	5.0
Pastoria Creek	216	SWP - CAA	4.0	5.0	1.1	4.0	3.1	1.9	1.0	3.0	1.0	1.0	1.0	3.0	3.1	2.0	4.9	1.0	3.0	5.0	4.9	1.0	4.0	3.0	2.0	5.0
Beartrap Road East	318	SWP - CAA	5.0	4.9	4.8	4.0	2.8	2.6	2.0	3.0	2.3	1.0	2.0	3.0	4.0	2.0	4.9	2.3	5.0	4.0	4.0	1.0	3.0	3.0	2.0	2.0
South of CAA East Branch/West Branch Bifurcation																										
AI/EX 3 Alternative 2-N	93	SWP - CAA	4.0	2.5	4.5	2.0	4.7	1.6	3.0	2.0	1.3	5.0	4.0	4.0	2.0	2.5	1.3	3.0	5.0	3.0	3.5	4.0	4.0	4.0	5.0	2.0
AI/EX 3 Alternative 2-S	70	SWP - CAA	5.0	4.2	5.0	2.0	4.9	1.6	3.0	2.0	1.0	5.0	4.0	4.0	2.0	4.2	1.0	3.0	5.0	3.0	4.0	3.0	5.0	5.0	2.0	1.0
Edenberry Forebay Exp	175	SWP - CAA	1.0	4.1	1.0	3.0	5.0	2.1	4.0	2.0	5.0	2.0	5.0	3.0	1.0	4.1	5.0	2.0	5.0	4.6	4.0	2.0	4.0	2.0	4.0	2.0
Freeman Canyon	108	SWP - CAA	3.0	2.8	3.4	3.0	4.2	1.7	3.0	4.0	4.5	1.0	3.0	5.0	2.0	1.0	2.8	4.7	2.0	5.0	4.0	3.5	3.0	3.0	4.0	2.0
Fairmont Reservoir Exp	11	SWP - LAA	5.0	1.0	4.1	3.0	4.8	1.0	5.0	2.0	4.8	4.0	3.0	5.0	4.0	1.0	1.0	4.8	2.0	5.0	4.0	1.0	5.0	1.0	2.0	5.0
Bouquet Canyon Road	307	SWP - LAA	2.0	5.0	4.0	3.0	1.0	3.1	5.0	2.0	4.0	2.0	2.0	5.0	3.0	1.0	5.0	4.0	4.0	5.0	1.0	2.0	5.0	5.0	3.0	2.0
Pedra	583	SWP - CAA	5.0	4.1	4.5	1.0	5.0	5.0	2.0	5.0	1.0	1.0	1.0	3.0	1.0	4.4	4.9	5.0	4.0	2.0	4.7	3.0	1.0	3.0	2.0	5.0
Eagle Valley Round	210	SWP - Lower Reservoir	4.0	3.6	5.0	1.0	1.8	2.4	5.0	2.0	2.4	2.0	2.0	5.0	4.0	2.0	3.9	2.4	5.0	5.0	4.4	3.0	4.0	4.0	5.0	5.0

Sites Retained

Site Name	Storage Capacity (TAF)
Ingram Creek	300
Del Puerto Creek Large	330
Crow Creek	140
Lower Garzas Creek	330
Lower Garzas Creek Large	650
Upper Quinto Creek	500
Kettleman Plain	100
Sunflower Valley	340
Freeman Canyon	110
Eagle Valley Round	210

Phase 3 Study

- **Objective:**
 - Retain limited sites for further technical & environmental evaluations
- **Phase 3A – Site Viability:**
 - Reconnaissance-level visual surveys by subject matter experts
 - Coordination with DWR
 - Discussions with other reservoir development proponents
 - Operational analysis of SWP and Metropolitan supply
- **Phase 3B – Initiate Field Evaluations:**
 - Initial discussions with landowners
 - Preliminary geologic & environmental investigation
 - Refine technical requirements and constructability
 - Conduct a CAMP4W comprehensive assessment



Next Steps

- **Complete Phase 2 Evaluation:**
 - Incorporate final review comments
 - Issue Phase 2 report
- **Initiate Phase 3 Evaluation:**
 - Develop detailed Phase 3 plan & scope of work
 - Initiate Phase 3
 - Perform site-specific evaluations to identify limited sites for detailed technical & environmental evaluation
 - Return to Board at the conclusion of Phase 3A

Conclusion - Metropolitan's Perspective

- Surface water storage is indispensable for ensuring that Southern California has a resilient, reliable, and adaptable water supply system
- It plays a central role in buffering variability, enabling operational flexibility, and supporting broader regional water management goals

