Engineering, Operations, & Technology Committee

Update on Surface Water Storage Study

Item 6b

May 12, 2025

Item 6b
Surface Water Storage Study Update

Subject

Surface Water Storage Study Update

Purpose

Review Phase 2 findings and outline planned Phase 3 work

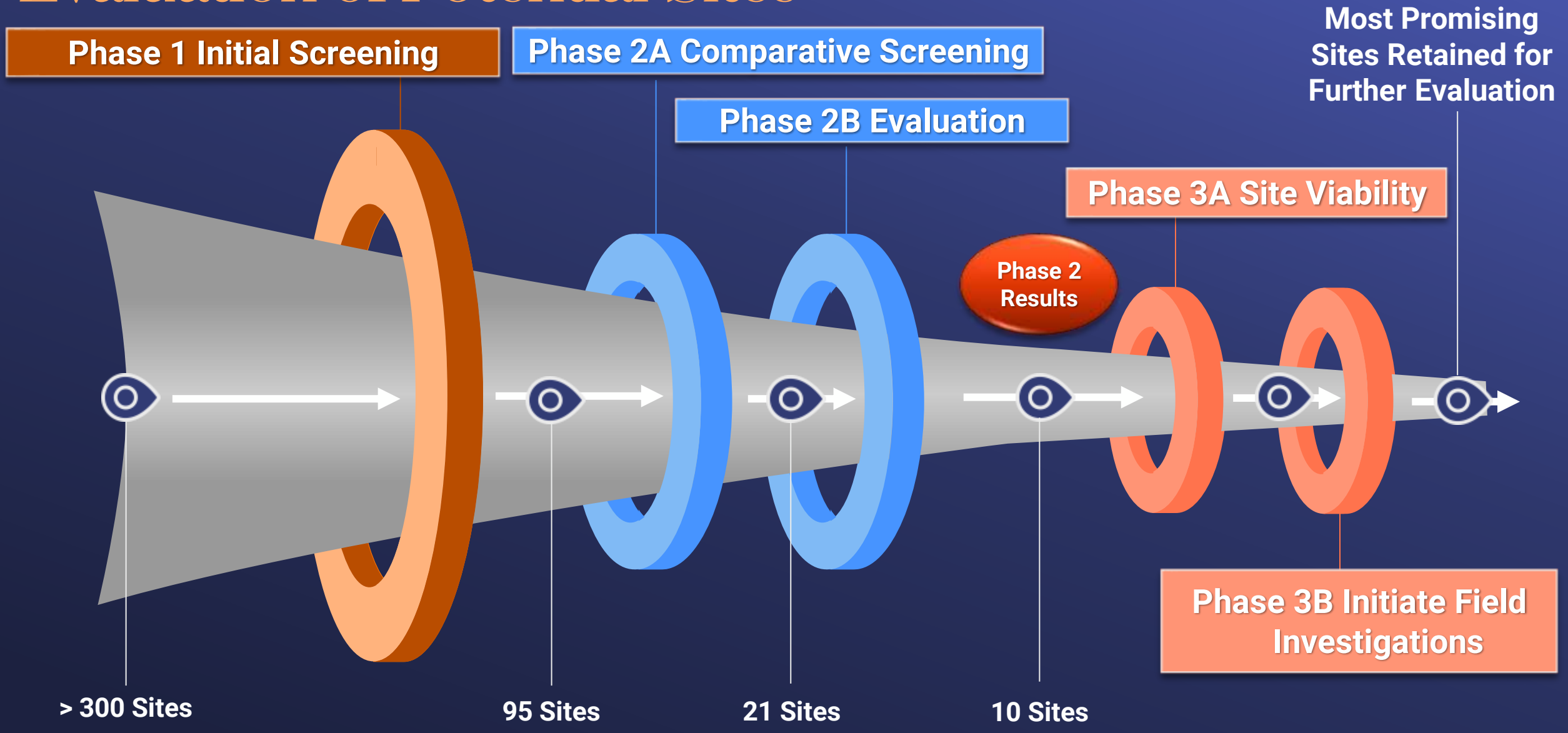
Next Steps

- Finalize Phase 2 study of potential sites
- Proceed to site-specific assessments (Phase 3)

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

Phase 2B Sites

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, liquefication & 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

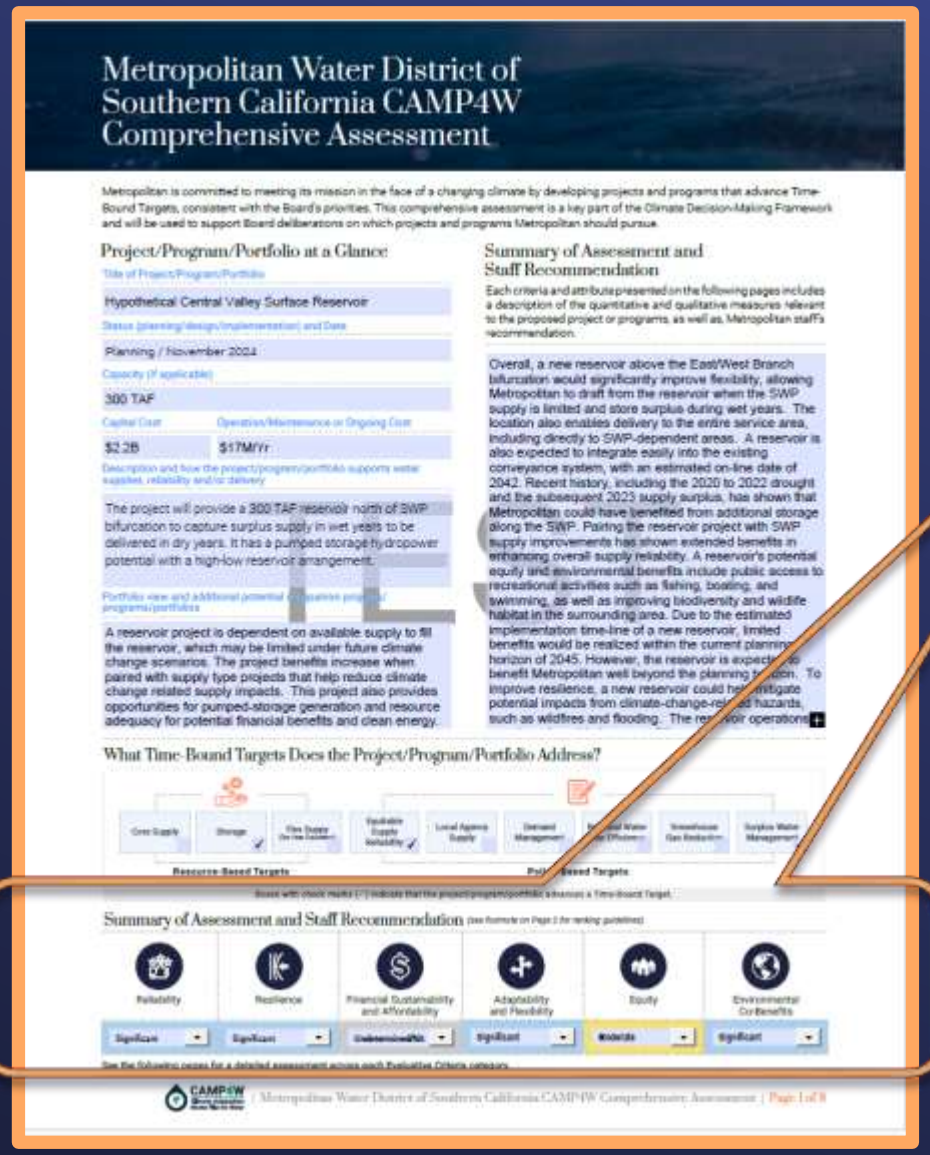
Site Scoring & Ranking

- **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**

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

CAMP4W Assessment – Surface Storage Reservoir Example*



Metropolitan Water District of Southern California CAMP4W Comprehensive Assessment

Metropolitan is committed to meeting its mission in the face of a changing climate by developing projects and programs that advance Time-Bound Targets, consistent with the Board's priorities. This comprehensive assessment is a key part of the Climate Decision-Making Framework and will be used to support Board deliberations on which projects and programs Metropolitan should pursue.

Project/Program/Portfolio at a Glance

Title of Project/Program/Portfolio
Hypothetical Central Valley Surface Reservoir
Status (planning/design/implementation) and Date
Planning / November 2024
Capacity (if applicable)
300 TAF
Capital Cost: $2.2B
Operation/Maintenance or Ongoing Cost: $17M/Yr
Description and how the project/program/portfolio supports water supplies, reliability and/or delivery
The project will provide a 300 TAF reservoir north of SWP bifurcation to capture surplus supply in wet years to be delivered in dry years. It has a pumped storage hydropower potential with a high-low reservoir arrangement.
Portfolio view and additional potential [illegible] programs/portfolios
A reservoir project is dependent on available supply to fill the reservoir, which may be limited under future climate change scenarios. The project benefits increase when paired with supply type projects that help reduce climate change related supply impacts. This project also provides opportunities for pumped-storage generation and resource adequacy for potential financial benefits and clean energy.

Summary of Assessment and Staff Recommendation

Each criteria and attribute presented on the following pages includes a description of the quantitative and qualitative measures relevant to the proposed project or programs, as well as, Metropolitan staff's recommendation.

Overall, a new reservoir above the East/West Branch bifurcation would significantly improve flexibility, allowing Metropolitan to draft from the reservoir when the SWP supply is limited and store surplus during wet years. The location also enables delivery to the entire service area, including directly to SWP-dependent areas. A reservoir is also expected to integrate easily into the existing conveyance system, with an estimated on-line date of 2042. Recent history, including the 2020 to 2022 drought and the subsequent 2023 supply surplus, has shown that Metropolitan could have benefited from additional storage along the SWP. Pairing the reservoir project with SWP supply improvements has shown extended benefits in enhancing overall supply reliability. A reservoir's potential equity and environmental benefits include public access to recreational activities such as fishing, boating, and swimming, as well as improving biodiversity and wildlife habitat in the surrounding area. Due to the estimated implementation time-line of a new reservoir, limited benefits would be realized within the current planning horizon of 2045. However, the reservoir is expected to benefit Metropolitan well beyond the planning horizon. To improve resilience, a new reservoir could help mitigate potential impacts from climate-change-related hazards, such as wildfires and flooding. The reservoir operations

What Time-Bound Targets Does the Project/Program/Portfolio Address?

Resource-Based Targets | Policy-Based Targets

Boxes with check marks ("✓") indicate that the project/program/portfolio advances a Time-Bound Target.

Summary of Assessment and Staff Recommendation (see footnote on Page 2 for ranking guidelines)

Reliability	Resilience	Financial Sustainability and Affordability	Adaptability and Flexibility	Equity	Environmental Co-Benefits
Significant	Significant	[illegible]	Significant	Moderate	Significant

See the following pages for a detailed assessment across each Evaluative Criteria category.

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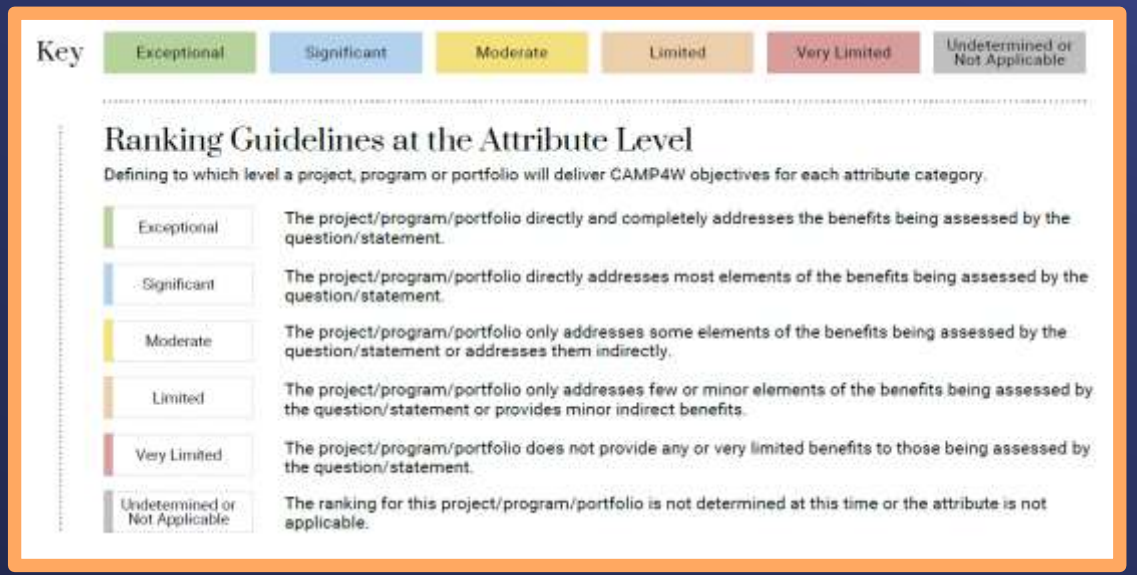

Key

Exceptional	Significant	Moderate	Limited	Very Limited	Undetermined or Not Applicable

Ranking Guidelines at the Attribute Level

Defining to which level a project, program or portfolio will deliver CAMP4W objectives for each attribute category.

Exceptional	The project/program/portfolio directly and completely addresses the benefits being assessed by the question/statement.
Significant	The project/program/portfolio directly addresses most elements of the benefits being assessed by the question/statement.
Moderate	The project/program/portfolio only addresses some elements of the benefits being assessed by the question/statement or addresses them indirectly.
Limited	The project/program/portfolio only addresses few or minor elements of the benefits being assessed by the question/statement or provides minor indirect benefits.
Very Limited	The project/program/portfolio does not provide any or very limited benefits to those being assessed by the question/statement.
Undetermined or Not Applicable	The ranking for this project/program/portfolio is not determined at this time or the attribute is not applicable.

**Presented as an example at the November 2024 CAMP4W Task Force meeting to test evaluative criteria*

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
  - Develop environmental compliance strategy

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 3A
  - Perform site-specific evaluations to identify limited sites for detailed technical & environmental evaluation
  - Return to Board at the conclusion of Phase 3A


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