Topic: **Sites Reservoir Project** **2016 May 01**

Subject: **Proposal Attachment 3**

Overview

Purpose: To provide an overview of the Sites Reservoir Project (Project) as an aid to prospective members to consider participating in the development of Project, by summarizing concepts included current studies and governance documents.

1. **Project Facilities:** The Sites Project Authority and Phase 1 Reservoir Project Agreement Committee are jointly developing a locally preferred alternative that physically resembles the DWR Alternative C, but with improvements intended to reduce local land use impacts, but the primary difference is with the operations, which is discussed in Section 2. Please note: Due to the Water Commission's application schedule, the technical studies are being developed in parallel with the on-boarding process. The following summary is based on the prior studies (refer to Section 6) and work in progress to prepare the feasibility study for inclusion into the application.

   Figure 1.1: Existing points of diversion and use of existing conveyance

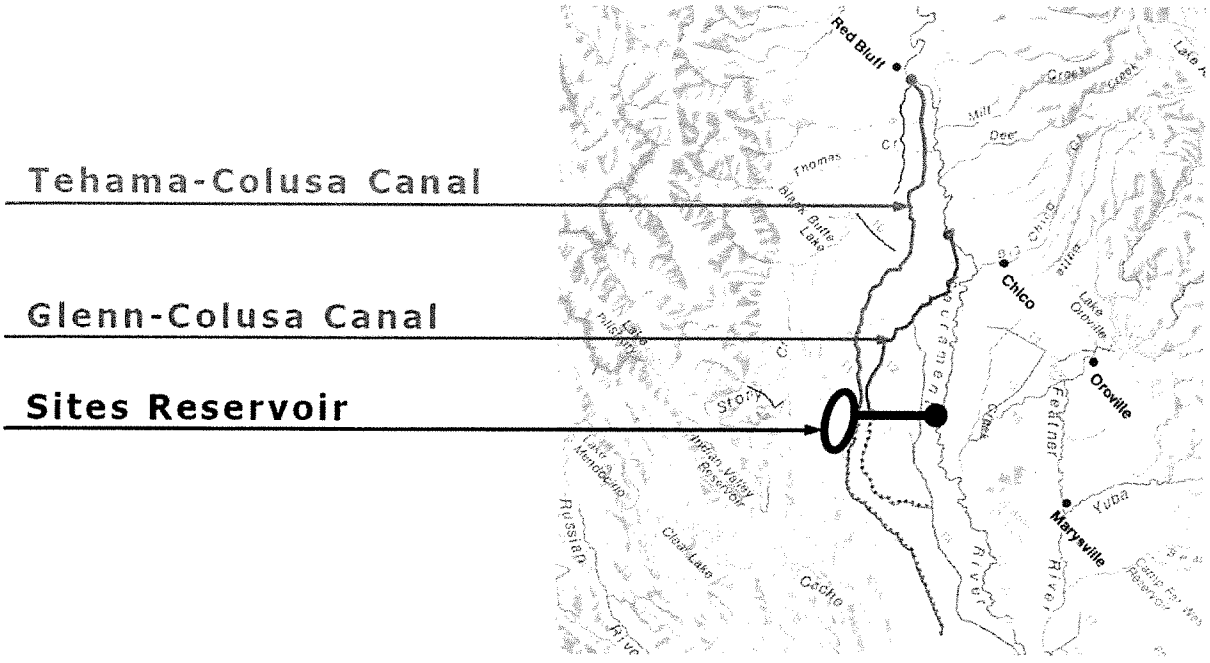


Figure 1.2: Facilities Map

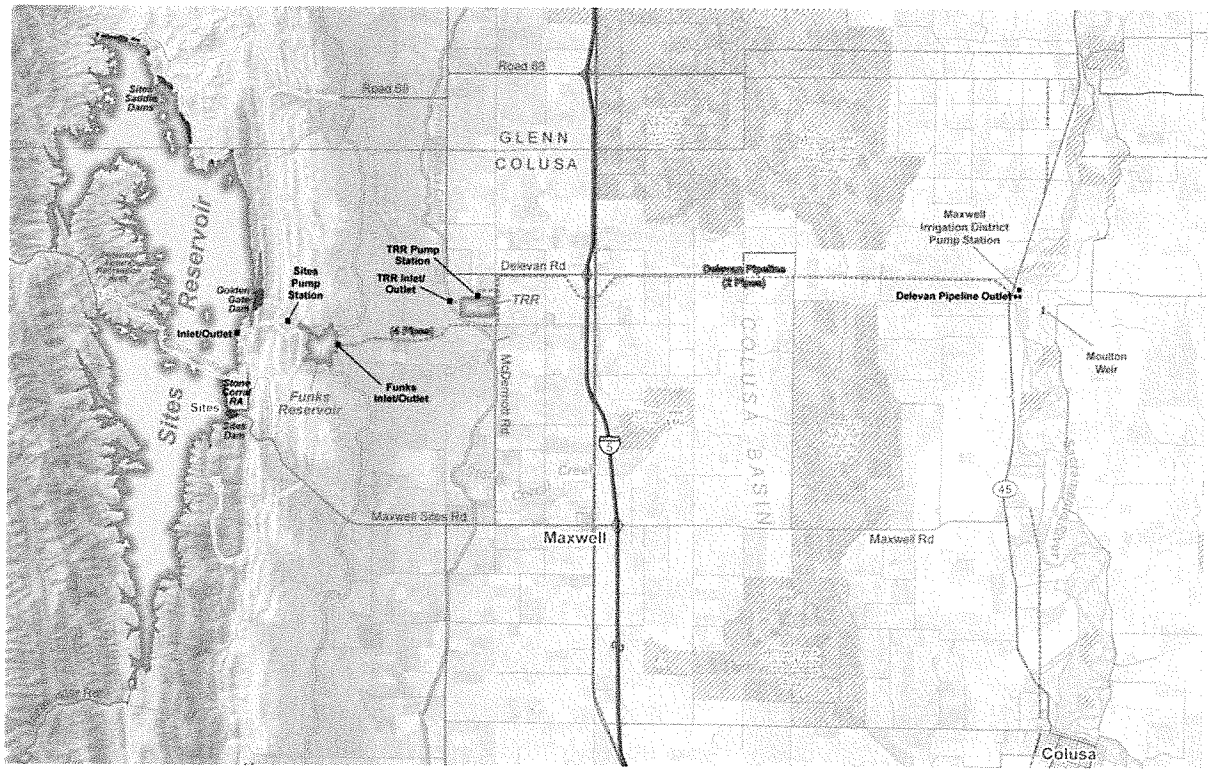
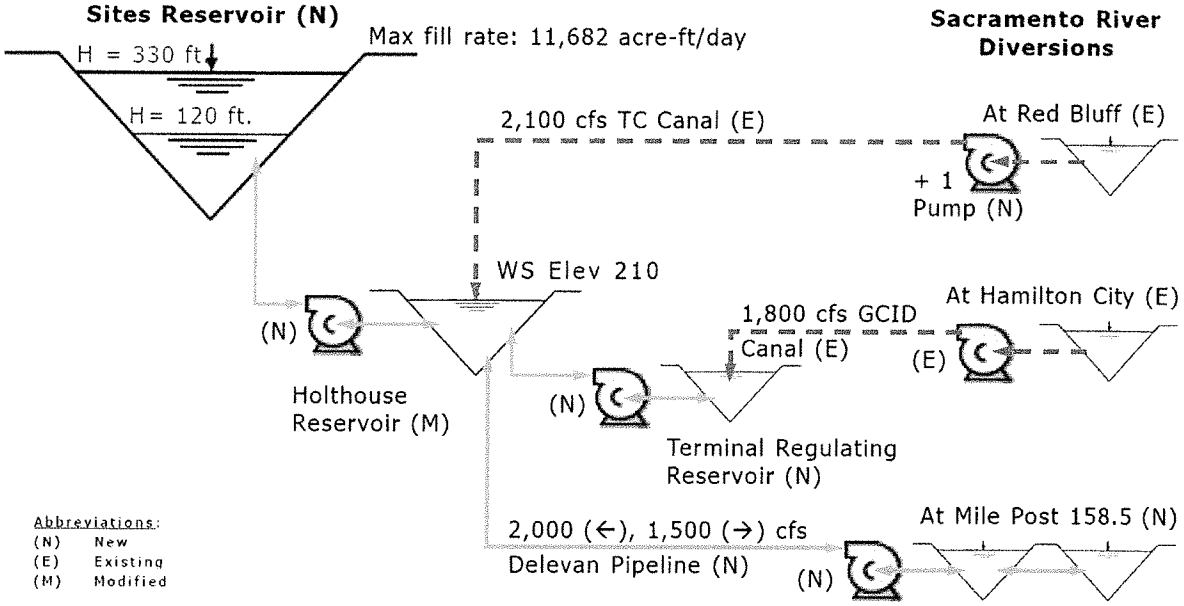


Figure 1.3: Schematic. Primary renewable energy occurs between Sites reservoir & Holthouse regulating reservoir.

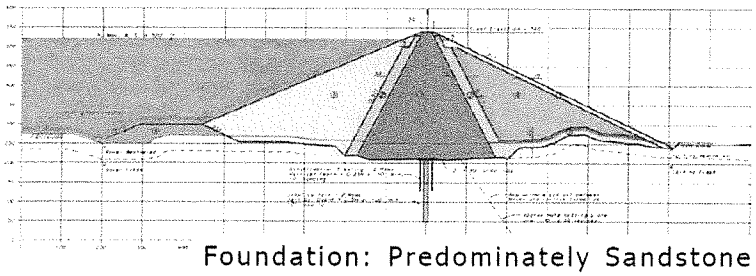


Plant Mode	Pumping Mode					Generation Mode		
Plant Name	TC Canal	GCID Canal	TRR	Sac River	Sites	Sites	TRR	Sac River
Planned Capacity, MW	6	3.39	19.68	65.65	181.35	123	9.8	10.8
Planned Capacity, cfs	2250	3000	1890	2000	5900	5100	1500	1500

Figure 1.4: Proposed Dams (Main dams are over 300 ft. tall)

Total Volume: 22 Mcyd

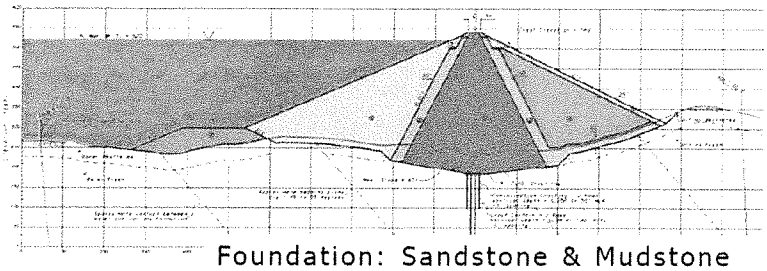
Sites



Height: 290 ft
Crest: 850 ft
Volume: 3.8 Mcyd

Foundation: Predominately Sandstone

Golden Gate



Height: 310 ft
Crest: 2,250 ft
Volume: 10.6 Mcyd

Foundation: Sandstone & Mudstone

9 Saddle Dams

Avg Height:	70 ft	Max	130 ft
Avg Crest:	1,380 ft	Max	3,810 ft
Total Volume:	7.6 Mcyd	Largest	3.6 Mcyd

Figure 1.5: Regulating Forebays

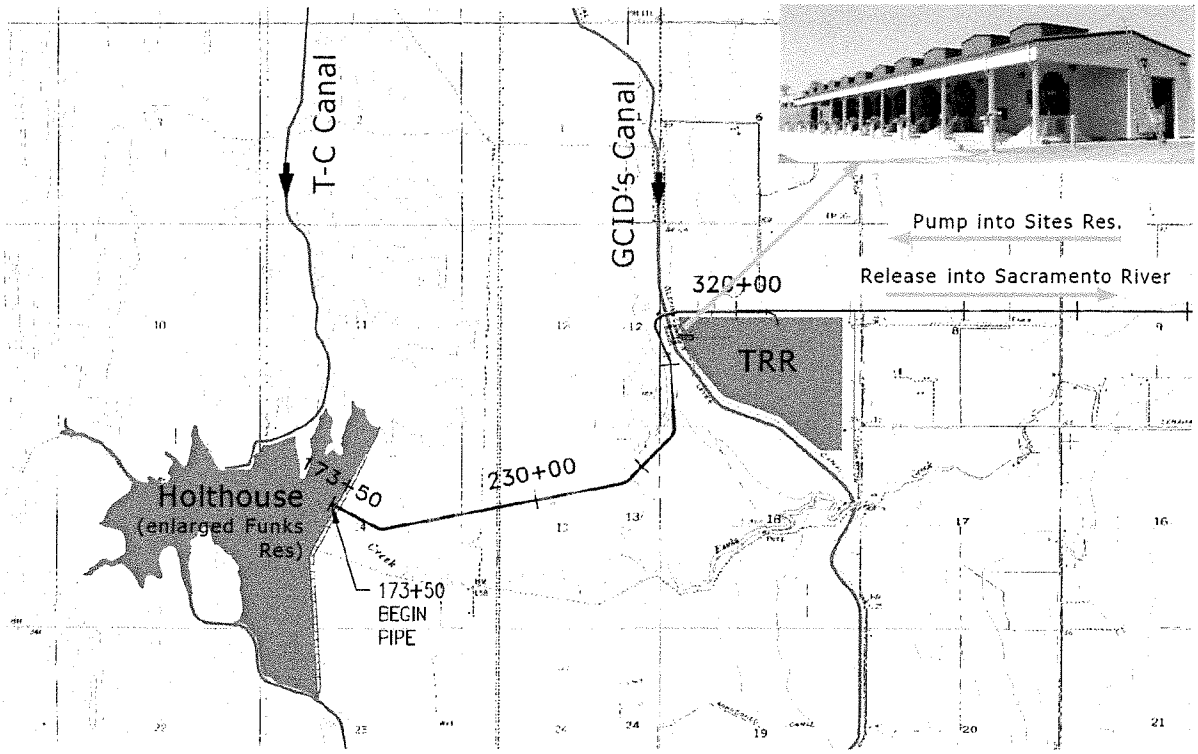
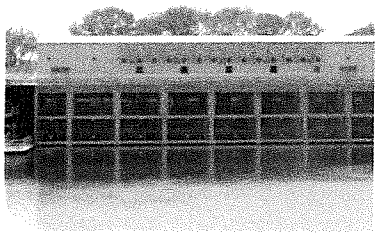


Figure 1.6: Proposed Delevan Intake

Red Bluff

Pump into Sites Res.

Release into Sacramento River



Red Bluff

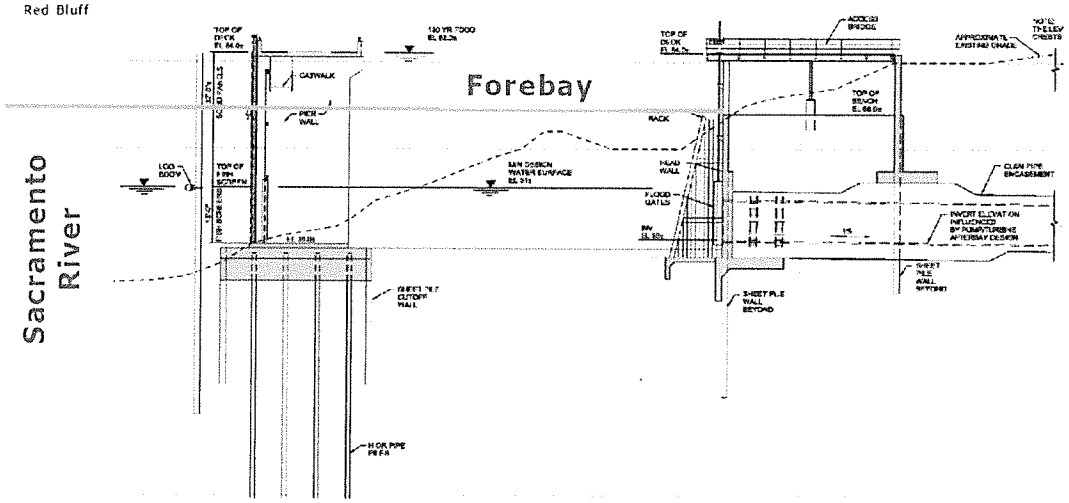
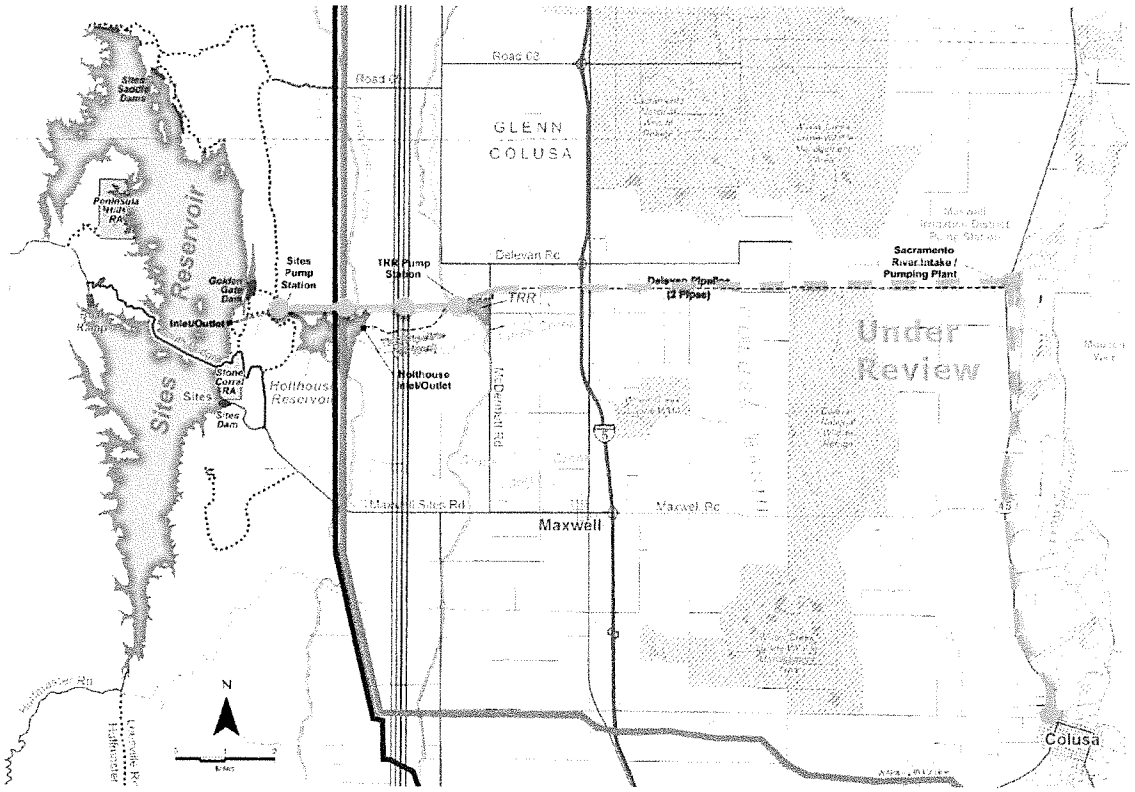


Figure 1.7: Proposed Grid Interconnection



2. **Project Operations:** The operational assumptions used in the prior studies are currently being revisited to develop the locally preferred alternative. At a minimum, the operations will include approximately 130,000 acre-ft. of water to meet northern Sacramento Valley demand. Additional concepts include the ability for Sites Reservoir to provide flows to repulse salinity, which is a Proposition 1, Chapter 8-eligible public benefit, ability to reduce operational demands of Folsom Reservoir during dry and critical years to maintain higher storage volumes, and how different strategies could be used by the resource agencies to achieve different ecosystem and/or water quality improvements (i.e. help to demonstrate the value of the Project and the flexible operations to respond to different sets of future conditions), which is a Proposition 1, Chapter 8-eligible public benefit. The results of these operational studies will form the basis for the application to the Water Commission. Please note: Due to the Water Commission's application schedule, the operational studies are being developed in parallel with this on-boarding process.

Figure 2.1a: Integrated Operations in the Sacramento Valley

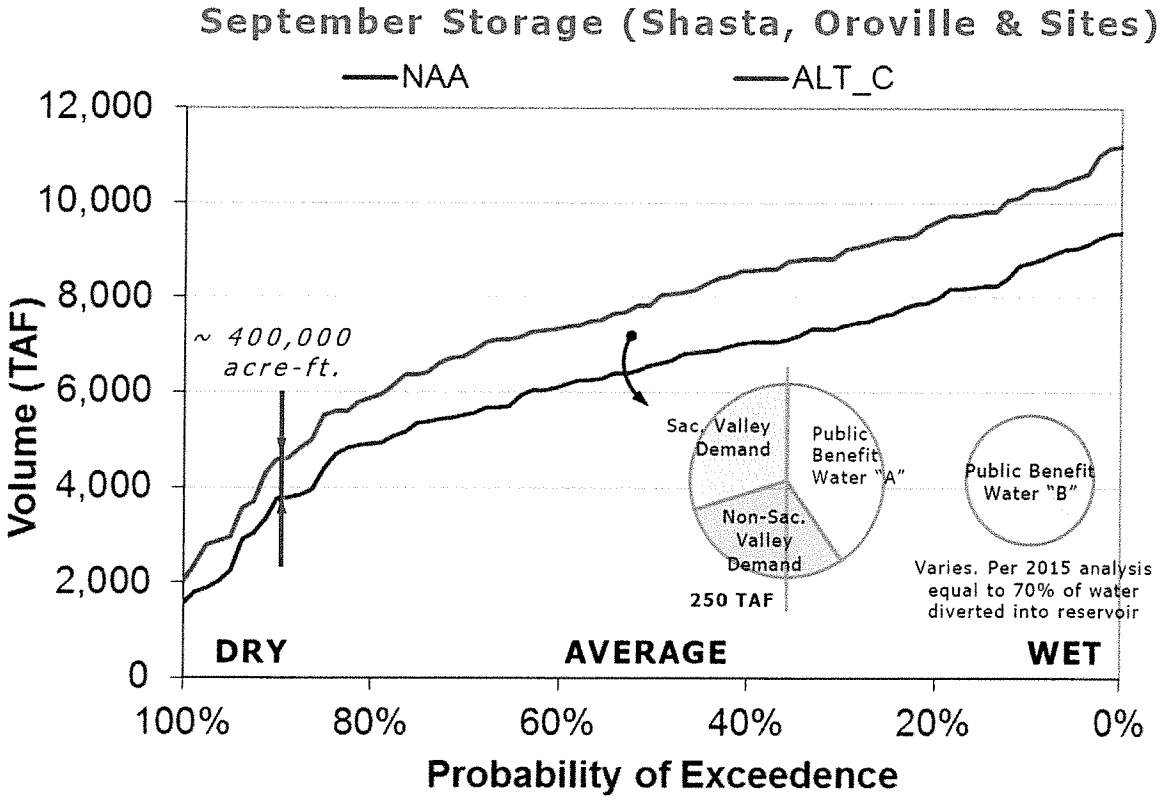


Figure 2.1b: Integrated Operations in the Sacramento Valley

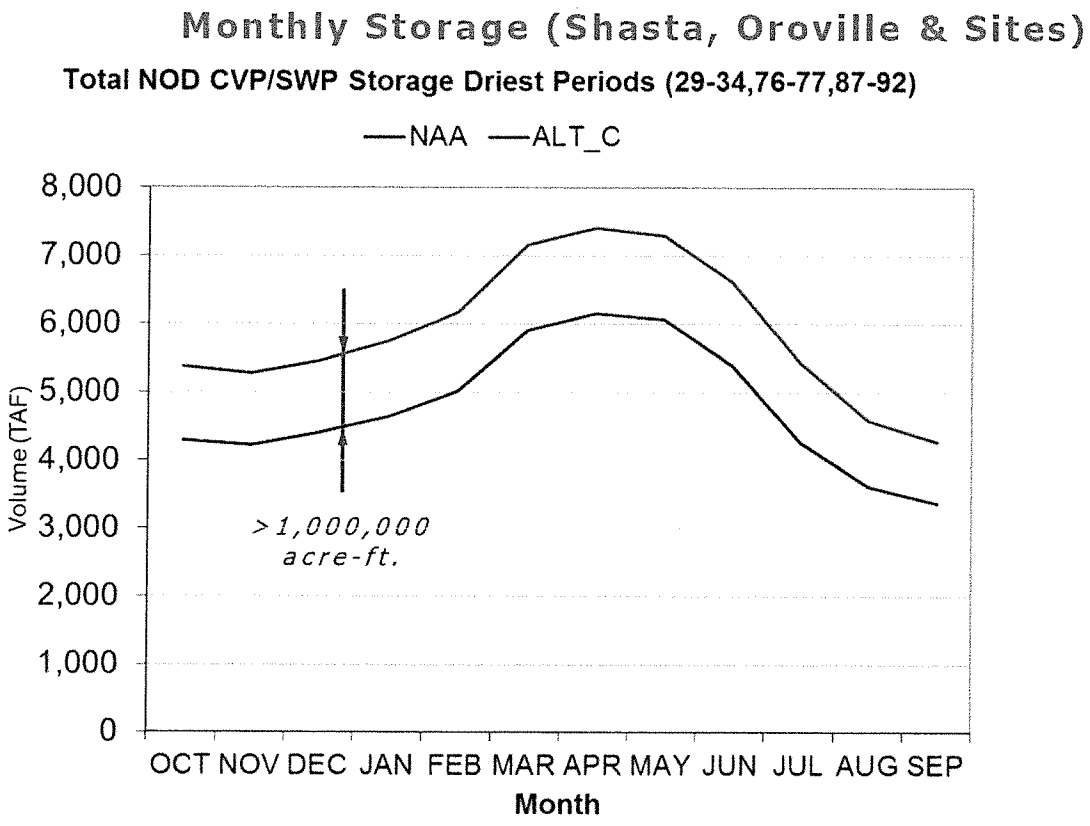


Figure 2.1c: Long-term annualized Storage by Water Year Type

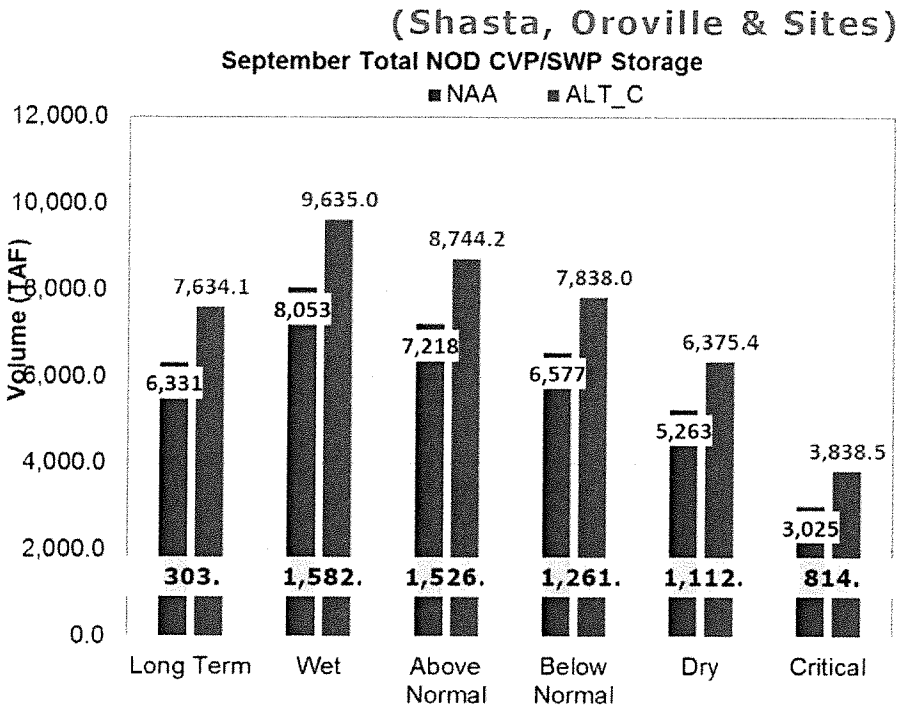


Figure 2.2a: Sites Reservoir. Long-term annualized Diversions into Storage

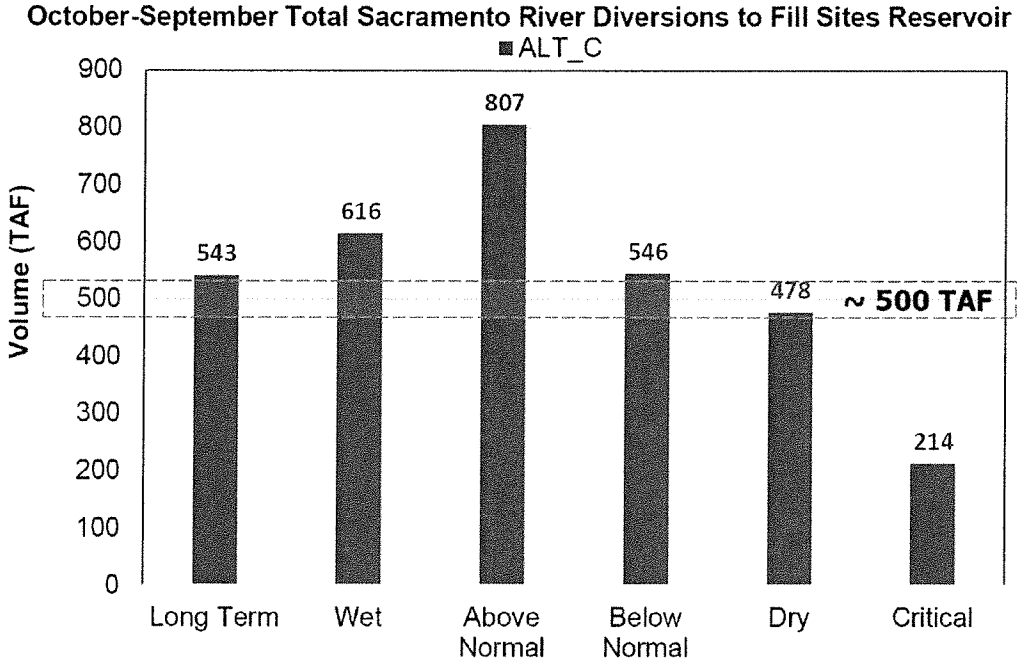


Figure 2.2b: Refill capability estimated at once in every 3 to 5 years for all alternatives.

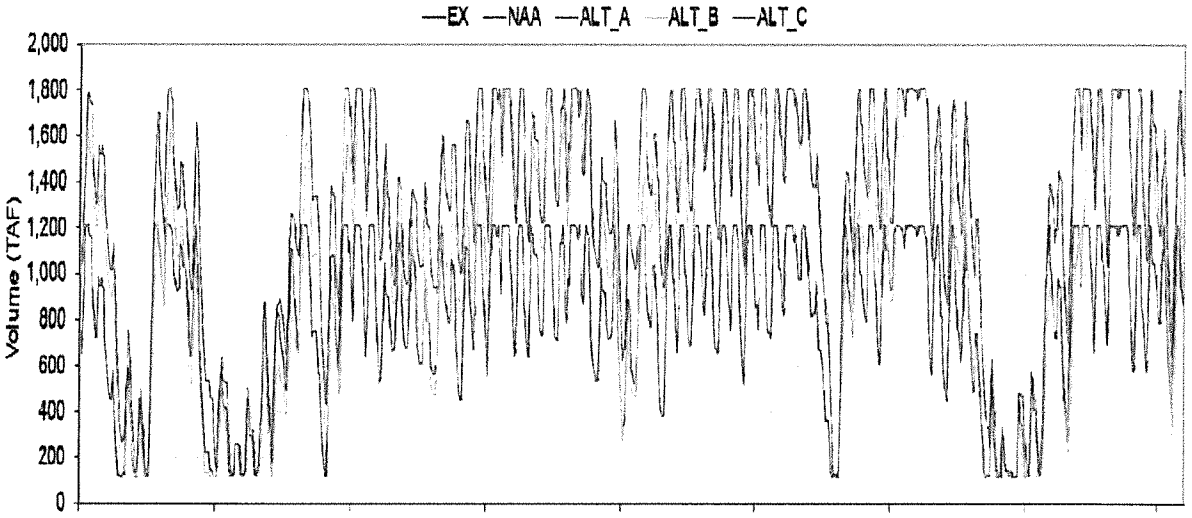


Figure 2.3: DWR analysis of operations during drought conditions

With drought conditions, water available to increase storage:

Reservoir	Storage (acre-ft.)	Percent increase	
Shasta	240,000	12.1	*Additional Water Produced (Public Benefits &/or Class 4 water)*
Oroville	105,000	7.1	
Folsom	37,000	9.6	
Trinity	79,000	8.5	
Sites	660,000		*Direct Benefit (~ 50% Class 1, ~ 50% Public Benefits water)*
Total	**1,121,000**	**23.4**	

While meeting the existing water quality and flow obligations of the CVP & SWP

Figure 2.4a: South of Delta Operations (modeling assumptions are based on prior studies)

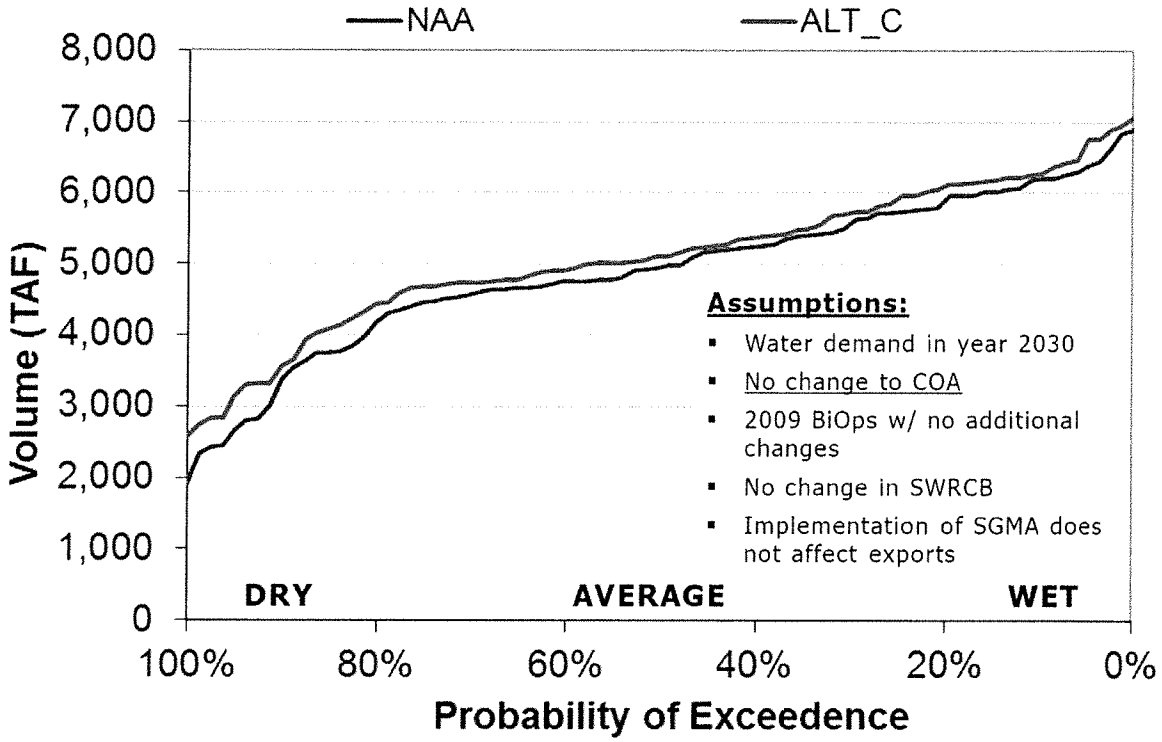


Figure 2.4b: South of Delta Operations - Long-term Annualized Storage by Water Year Type (modeling assumptions are based on prior studies)

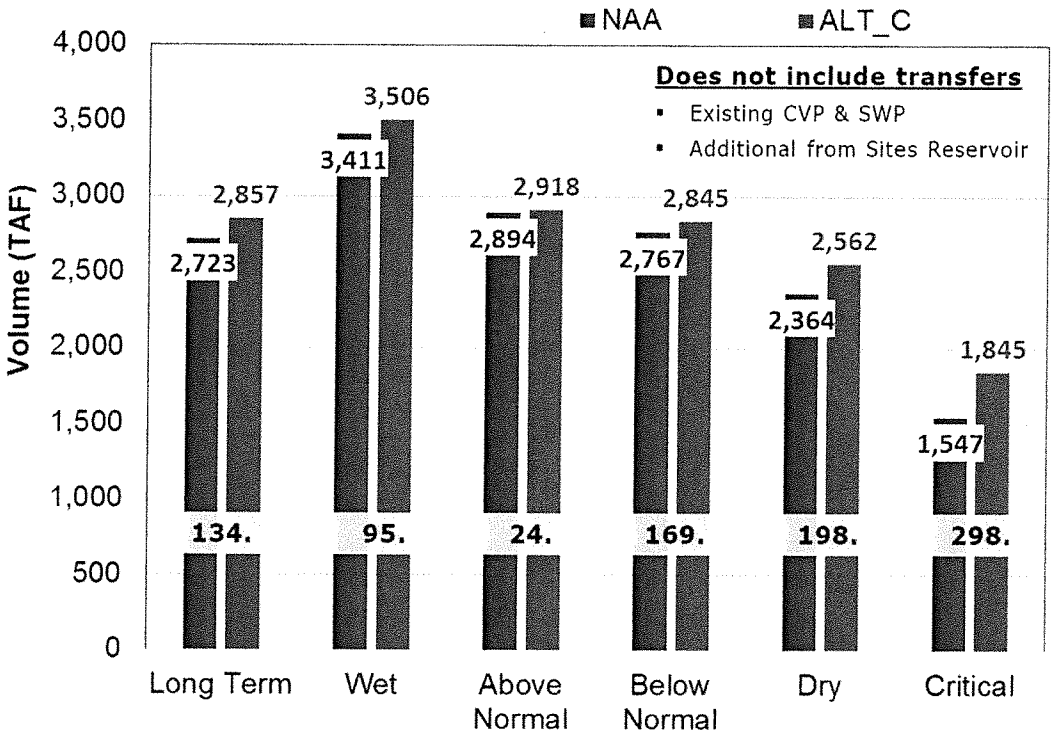
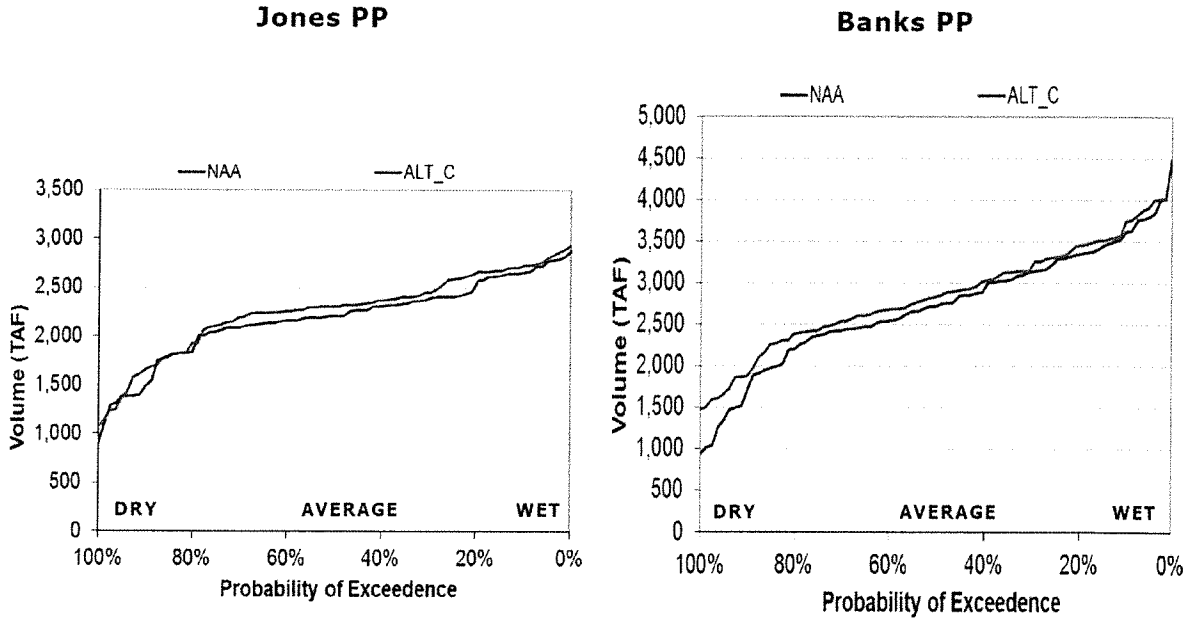


Figure 2.4c: South of Delta Operations - Long-term Annualized Diversions at Jones and Banks PP (modeling assumptions are based on prior studies)



October through September

Figure 2.5a: Folsom Reservoir Operations (See Note).

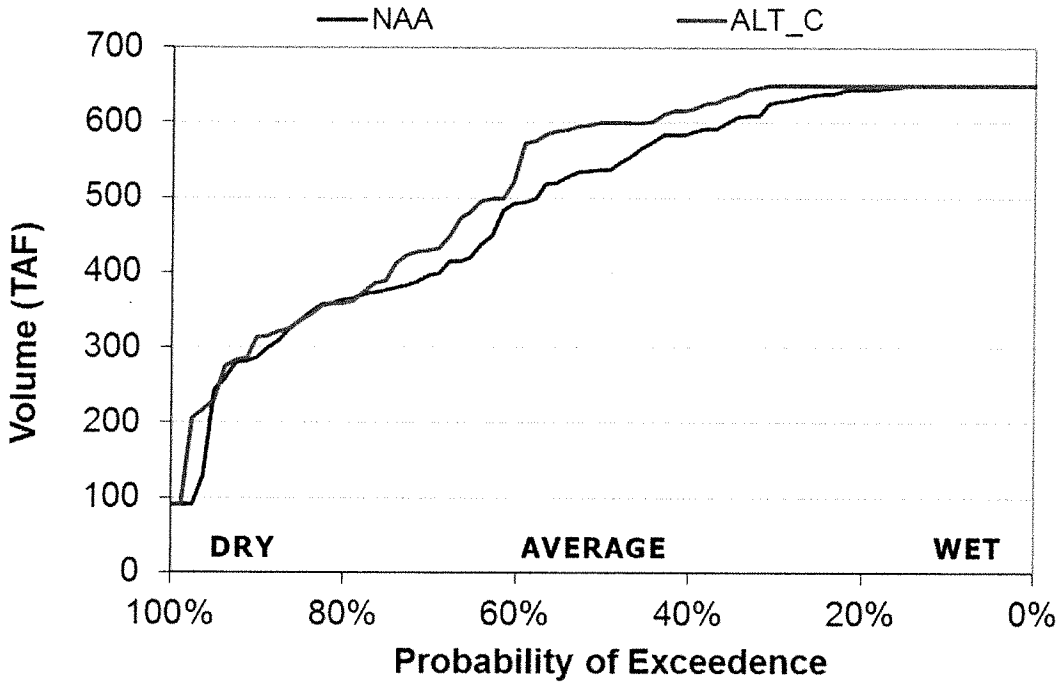
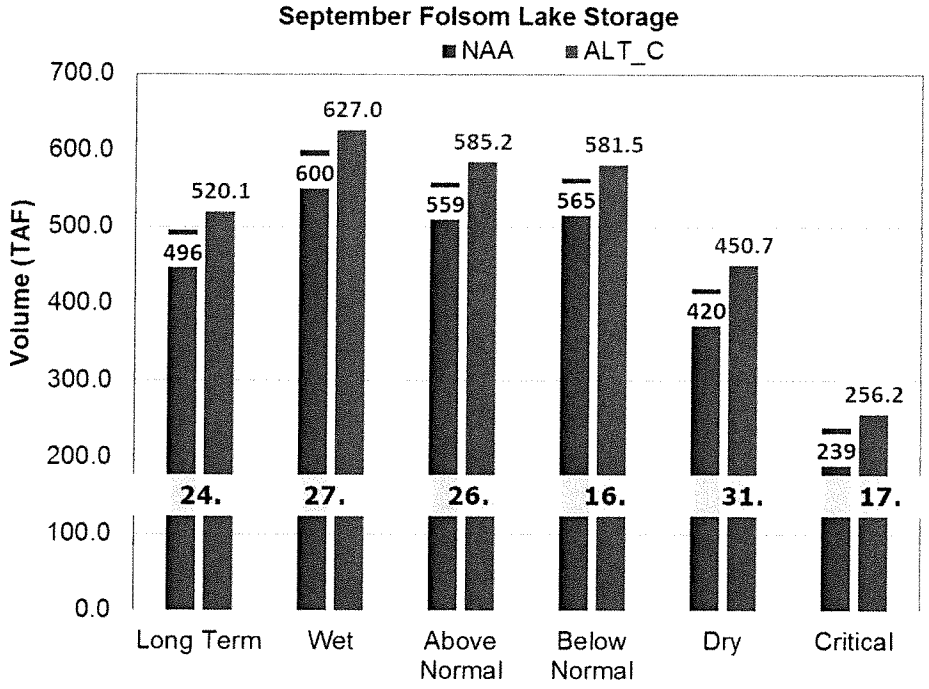


Figure 2.5b: Folsom Reservoir Operations - Long-term Annualized Storage by Water Year Type (See Note).



NOTE: Modeling assumptions are based on assumptions used in prior studies, which may not accurately reflect the future needs of this region.

Project Phase Summary Schedule: The following summarizes the current milestones and summary-level activities. Please note: As the Water Commission's regulatory approval proves advances, the Phase 1 schedule will be updated in parallel with the on-boarding process.

Figure 3.1 All Phases

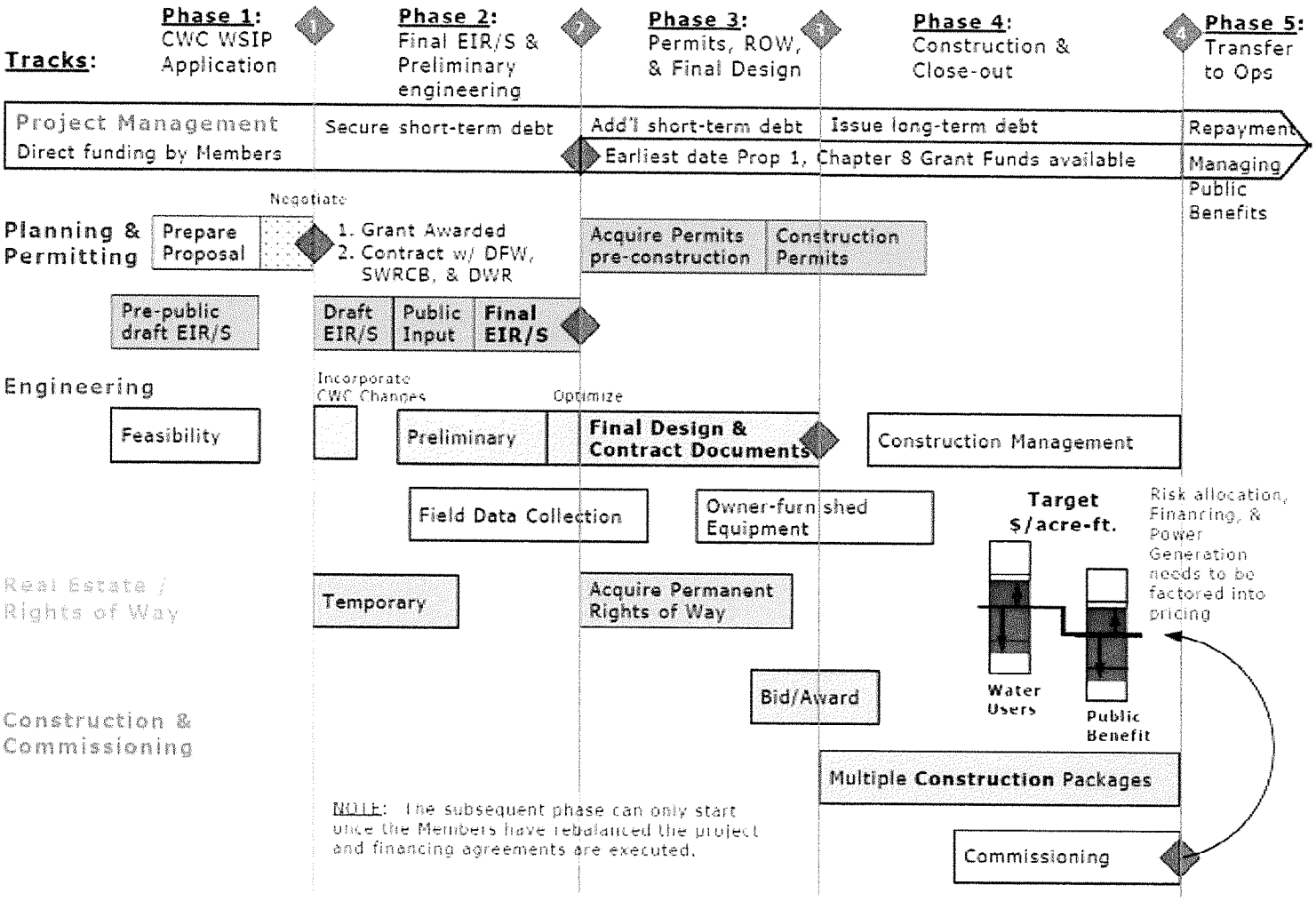
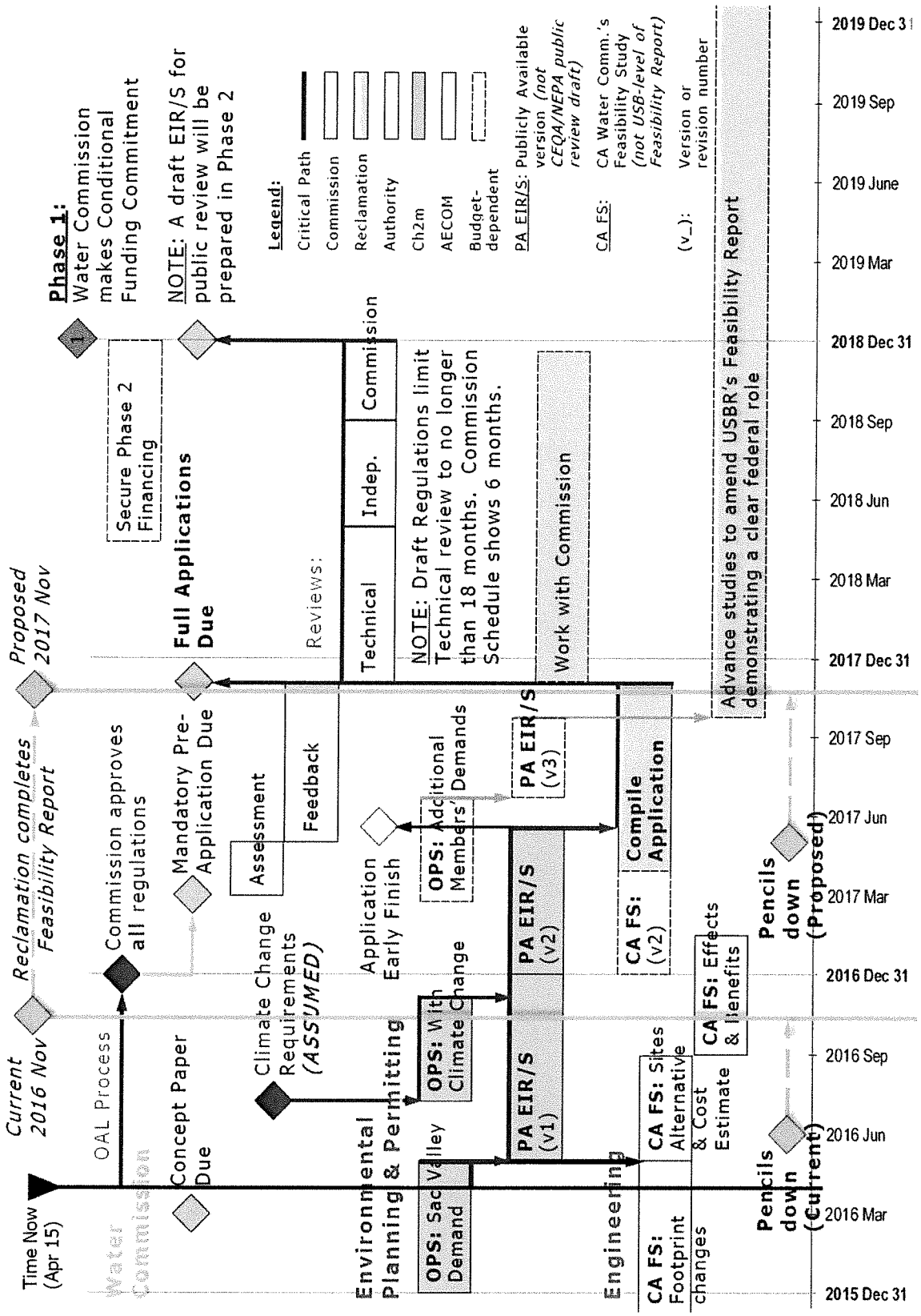

Tracks:
Phase 1: CWC WSIP Application
Phase 2: Final EIR/S & Preliminary engineering
Phase 3: Permits, ROW, & Final Design
Phase 4: Construction & Close-out
Phase 5: Transfer to Ops
Project Management
Direct funding by Members
Secure short-term debt
Add'l short-term debt
Issue long-term debt
Repayment
Earliest date Prop 1, Chapter 8 Grant Funds available
Managing Public Benefits
Planning & Permitting
Negotiate
Prepare Proposal
1. Grant Awarded
2. Contract w/ DFW, SWRCB, & DWR
Acquire Permits pre-construction
Construction Permits
Pre-public draft EIR/S
Draft EIR/S
Public Input
Final EIR/S
Engineering
Incorporate CWC Changes
Optimize
Feasibility
Preliminary
Final Design & Contract Documents
Construction Management
Field Data Collection
Owner-furnished Equipment
Target $/acre-ft.
Risk allocation, Financing, & Power Generation needs to be factored into pricing
Real Estate / Rights of Way
Temporary
Acquire Permanent Rights of Way
Water Users
Public Benefit
Bid/Award
Construction & Commissioning
Multiple Construction Packages
Commissioning
NOTE: The subsequent phase can only start once the Members have rebalanced the project and financing agreements are executed.

Figure 3.2: Phase 1



3. Governance: The Sites Project Authority and Phase 1 Reservoir Project Agreement Committee are organized to comply with the requirements of Proposition 1, Chapter 8. This requires the creation of a dual-governance system whereby the Authority is the local sponsor, but has partners with non-local entities to participate in the financing of the project via the creation of the Phase 1 Reservoir Project Agreement Committee. The following illustrate the governance structure and decision-making processes.

Figure 4.1a: Proposition 1 Organizational Requirements

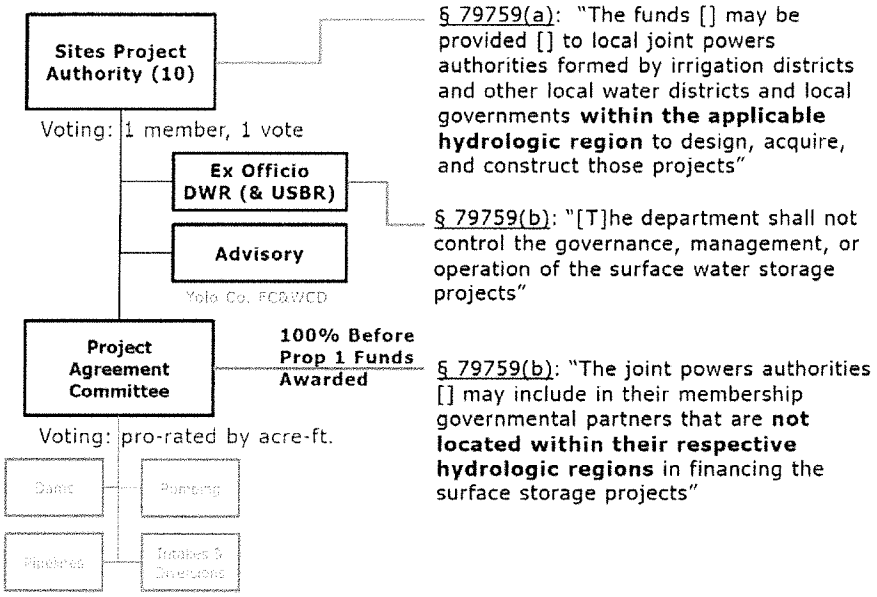


Figure 4.1b: Sites Reservoir Project Organization

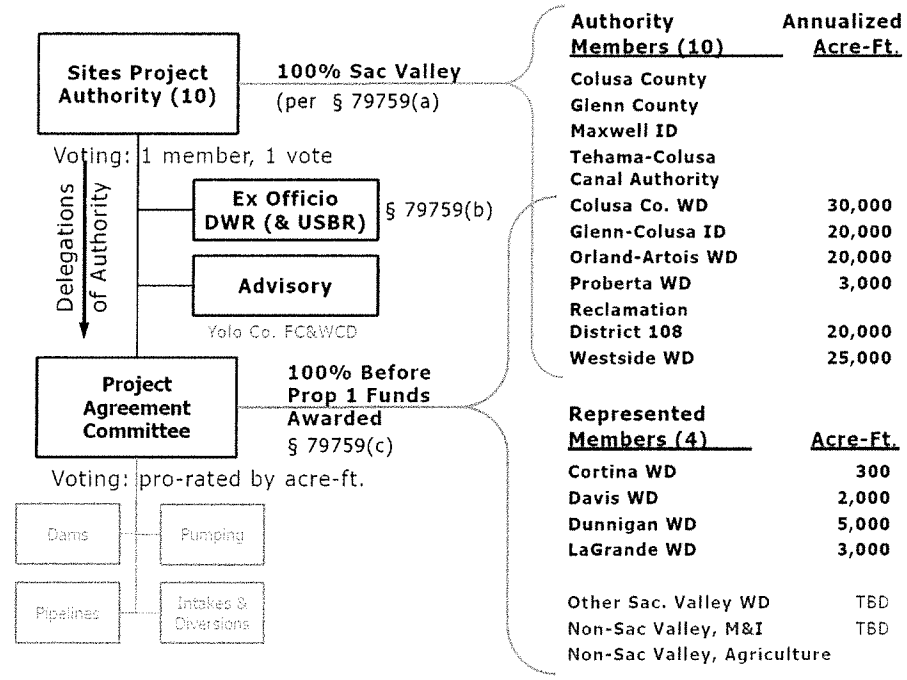
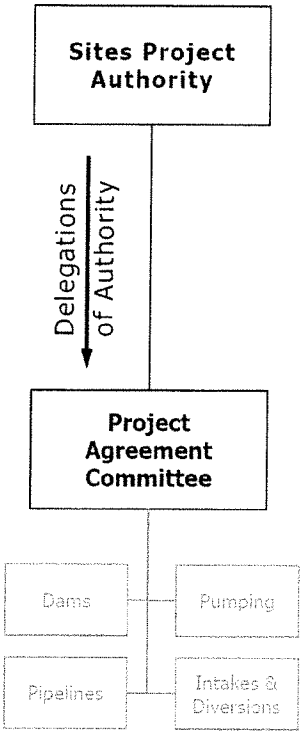


Figure 4.2a: Roles of Authority vs. Phase 1 Reservoir Project Agreement Committee



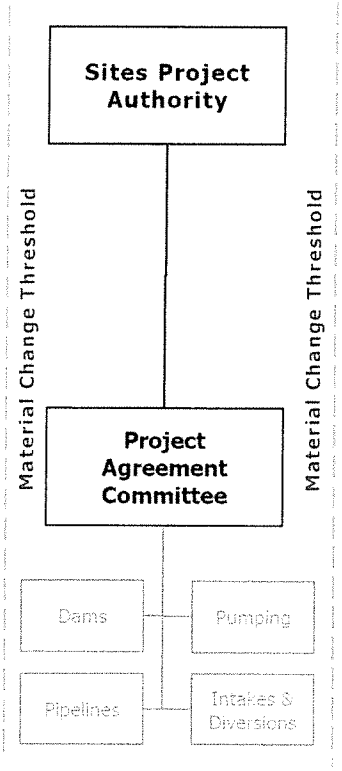
Authority's Role:

- ✓ The applicant for Proposition 1, Chapter 8 grant
- ✓ The CEQA lead agency and work with USBR as the NEPA lead agency
- ✓ Hold title to any water rights issued by SWRCB
- ✓ Obtain permits & acquire property, easements and rights-of-way
- ✓ Be the owner of record for dam safety requirements and regulatory obligations.
- ✓ May delegate (or rescind) responsibilities to a Project Agreement Committee

Project Agreement Committee:

- ✓ Requires a minimum of 2 Authority Members execute each Project Agreement. The Authority is also signatory to each Project Agreement.
- ✓ Comply with terms and conditions established by the Authority in the Reservoir Project Agreement.
- ✓ Maintain sufficient reserves to ensure a positive cash flow.
- ✓ For Phase 1, manage the studies and related materials that will be required in the application for funding in compliance with Proposition 1, Chapter 8 requirements.

Figure 4.2b: Decision-making



Approach: Each decision-making body has discretion to make decisions within limits of their authorities. Limits are defined as thresholds that may result in a Material Change from baseline conditions approved by the Authority.

- ❑ Sites Project Authority: Chartering Document and Bylaws
- ❑ Project Agreement Committee: Bylaws and compliance with terms and conditions delegated by the Sites Project Authority in the Project Agreement.

Material Change provisions:

- Budgets: Operating and target including line-item transfers
- Eligibility to receive funds from a Proposition 1, chapter 8 grant
- Impact to water rights and/or annualized yield
- Changes in Member's level of funding commitment that may shift additional cost to other Members.
- Dam Safety permits and compliance.
- Changes in scope, schedule or cost – both up-front and O&M.
- Change in pumping power (or renewable generation)
- Comply or require extreme measures to comply with OSHA requirements.
- Shifting of significant risk
- Changes in environmental mitigation or compliance obligations.
- Changes in facility performance or reliability

Figure 4.3: Phase 1 Weighted Voting applicable to participation in the Phase 1 Reservoir Project Agreement Committee

When all votes are cast, total = 100%

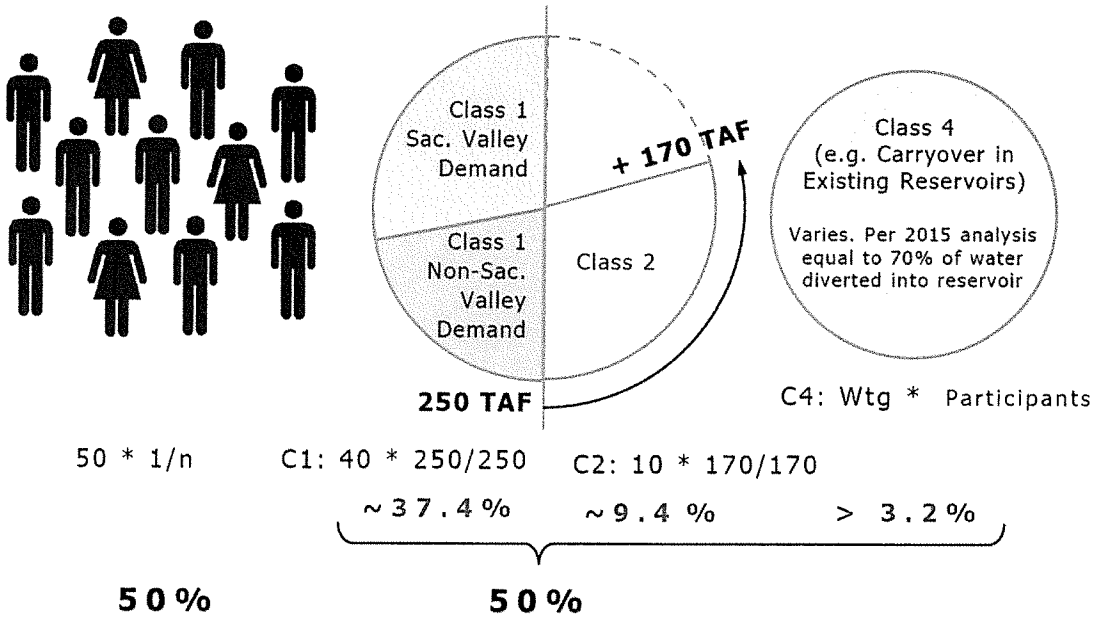
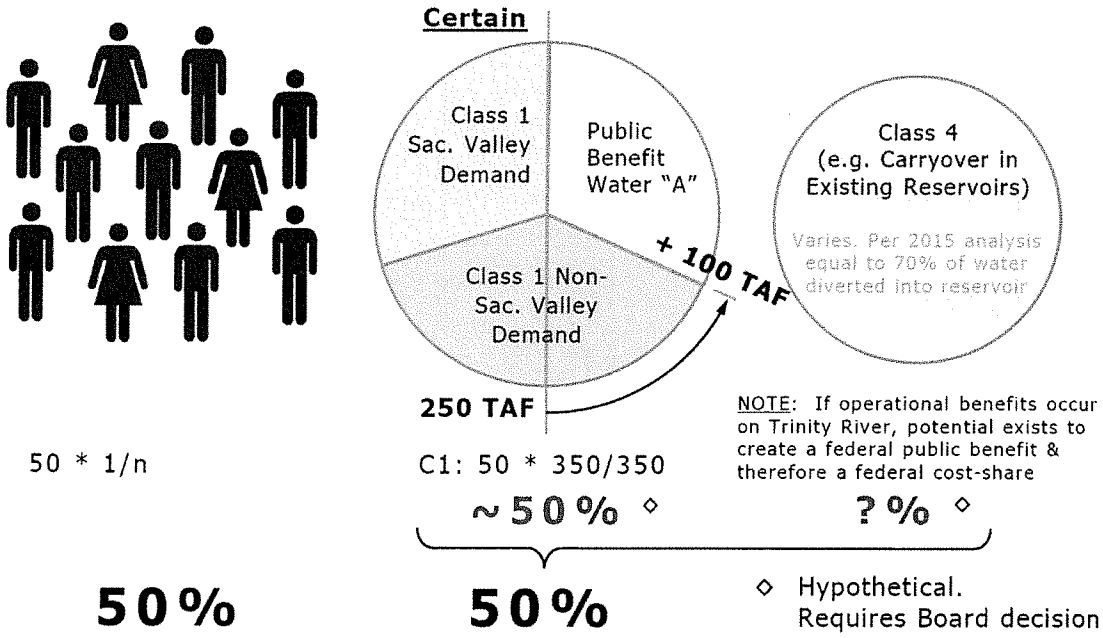


Figure 4.4b: Hypothetical Phase 2 Weighted Voting applicable to participation in the Phase 1 Reservoir Project Agreement Committee. Assumes State procures less than 50% of the construction cost in exchange for less than 50% of the public benefits)

When all votes cast, total = 100%



NOTE: With re-balancing process, the amount of Class 2 water that is not applied towards public benefits will become Class 1 water.

4. **Cost Management:** Details are provided in both the *Bylaws of the Sites Project Authority for Phase 1 of the Sites Reservoir Project* and *Exhibit B: Phase 1 Reservoir Project Agreement Requirements*. At a summary level, the following foundational concepts are provided as follows:

   a. Work Plan and Budgets: For each Phase, a work plan and budget will be prepared for acceptance by the Authority and Phase 1 Reservoir Project Agreement Committee. This serves as the Phase-level cost target used to estimate each Member's cost-share based on their level of participation. At least annually, a budget is also approved jointly by the Authority and Phase 1 Reservoir Project Agreement Committee. This annual budget serves as the basis for each Member's funding commitment for the upcoming year.

   b. Phase 1 Work Plan and Budget: The Phase 1 Work Plan (refer to Exhibit B) was approved based on submittal of the application to the Water Commission by the end of 2017. The Water Commission's current schedule includes at least one year to complete its evaluation process to then make an initial funding decision and per the draft regulations, the duration could be closer to 1.5 years. In parallel with the on-boarding process, the Authority and Phase 1 Reservoir Project Agreement Committee will be determining if Phase 1 should be extended to coincide with the Water Commission's initial funding decision and if so, approve an update to the Phase 1 work plan and budget.

   c. Cost-Allocation (Authority & Phase Reservoir Project Agreement Committee): For Phase 1, there are activities that are cost-shared by the Authority and the Phase 1 Reservoir Project Agreement Committee (e.g. project management). Other activities are assigned to either the authority or the Phase 1 Reservoir Project Agreement Committee to perform (e.g. technical studies for inclusion into the application are assigned to the Phase 1 Reservoir Project Agreement Committee.

   d. Financial Model: A financial management model (aka Prospectus Model) will be used as an aid in the decision-making by maintaining an estimate of the Project's cost/acre-ft. for both consumptive use and eventually public-benefit water. Initially, a number of financing strategies will be evaluated with one selected to serve as the baseline. As the Project evolves, the model will be updated to reflect the currently approved baseline financing strategy. Please note: Due to the Water Commission's application schedule, this financial model will be developed in parallel with the on-boarding process.

   e. Initial Payment: One condition of membership is for each prospective member to make an initial 'true-up' payment that reflects the amount they would have paid for their level of participation assuming they had been a member at beginning of the Project escalated by the time-value of money, which is a feature of the Prospectus Model. This is intended to make sure that all Members have contributed their share of costs (i.e. early Members are not subsidizing Members who join later). While the Authority was created in 2010,

with cost incurred by the members to advance the Project, for this on-boarding process, the effective start date to be used to calculate the escalation is Jan 1 2016 for participation in either the Authority or the Phase 1 Reservoir Project Agreement Committee.

f. Re-balance Process: Prior to starting any subsequent phase, participation in advancing the Sites Reservoir Project will be "re-balanced" to allow each Member to revisit their proposed level of upcoming participation and funding. A similar evaluation process will be used by a committee comprised of Members and the Prospectus Model will be used to calculate the time-value of money.