



MEMORANDUM

FC 14 (01-02-07)

TO: Board of Directors

FROM: Water Storage Exploratory Committee

SUBJECT: Water Storage Exploratory Committee Meeting
Summary for November 9, 2020

DATE: November 24, 2020

This memorandum summarizes agenda items from the regular meeting of the Water Storage Exploratory Committee held on November 9, 2020.

Attendees:

Valley Water Board Members in attendance were: Director Gary Kremen-District 7, Director Richard P. Santos-District 3, and Director John L. Varela-District 1.

Valley Water Staff in attendance were: Antonio Alfaro, Aaron Baker, Erin Baker, Glenna Brambill, Debra Butler, Keila Cisneros, Jerry De La Piedra, Andrew Garcia, Vincent Gin, Samantha Greene, Andrew Gschwind, Christopher Hakes, Brian Hopper, Dana Jacobson, Katrina Jessop, Cindy Kao, Eric Leitterman, Michael Martin, Ryan McCarter, Steven Peters, Melanie Richardson, Metra Richert, Donald Rocha, Eli Serrano, Charlene Sun, Jing Wu, Bhavani Yerrapotu, and Beckie Zisser.

Guests in attendance were: Jerry Brown (Sites Authority), Thomas Francis, Danielle McPherson and Nicole Sandkulla (BAWSCA), Steve Jordan (BAWSCA/Purissima Hills Water District), Chung Fu Chang, Yuan Liu, Maureen Martin, Ph.D., and Marguerite Patil (Contra Costa Water District {CCWD}), Paul Sethy and John Weed (Alameda County Water District {ACWD}).

Public in attendance were: Mourad Attalla, Jim Bowley, D. Cramer, Laura Hidas, James Nelson, Javad Shafiei, C. M. Tompkison, and Gene Z.

ACTION ITEMS:

4.2 MONITORING AND ASSESSMENT PROGRAM 2020 EVALUATION OF LOS VAQUEROS RESERVOIR EXPANSION AND SITES RESERVOIR

Mr. Vincent Gin, Ms. Samantha Greene and Ms. Cindy Kao reported on the following information:

Summary from Agenda Memo:

Staff Recommendations

Los Vaqueros Reservoir Expansion Project

Staff recommend continuing to participate in the next phase of Los Vaqueros Expansion Project (LVE). The storage component of LVE could provide an important storage diversification option, offering regional storage that would be more accessible during emergencies. The Transfer-Bethany Pipeline has the potential to provide operational flexibility in how Valley Water can receive its imported supplies and supports Valley Water's participation in other potential regional projects. Continuing to participate in the next phase of LVE provides Valley Water time to better evaluate the potential benefits of the project given the new MAP demands, including whether and how LVE could support Valley Water's water supply reliability.

Sites Reservoir

Staff recommends reducing Valley Water's requested yield from the Sites Reservoir Project (Sites) to 500 AF, corresponding to a 0.2% participation level in the project. The Water Supply Master Plan 2040 (Master Plan) considers the Sites project as a back-up to the Delta Conveyance Project, which is a Master Plan recommended project. Continuing a minimal participation in Sites allows Valley Water time to better evaluate Valley Water's

water supply reliability needs within the context of the new demands, re-evaluate Master Plan project costs and risks, and refine Valley Water's evaluation of Sites' and Master Plan projects' benefits and constraints.

Background

Valley Water presented the Monitoring and Assessment Program 2020 (MAP) report to the Board of Directors (Board) on October 27, 2020, which included an updated demand forecast through 2040. The Water Supply Master Plan 2040 (Master Plan) demands were developed during the 2012-2016 drought and assumed a post-drought rebound to pre-drought water use. However, drought rebound has been limited, so Valley Water developed a new demand model as part of MAP that accounts for this lack of a full rebound. The MAP demand forecast being utilized for planning purposes is approximately 335 thousand AF (TAF) in 2040, which is 14% lower than the demand forecast in the Master Plan. Given the updated demand forecast, Valley Water is evaluating its participation in various projects, including the Los Vaqueros Expansion (LVE) Project and Sites Reservoir (Sites).

The Master Plan recommended a suite of projects that exceeded Valley Water's level of service goal to be prudent given future uncertainties with demands and supplies (Figure 1). In addition to the recommended projects, there are also alternate Master Plan projects in which Valley Water is participating in case a recommended project does not move forward or fails to achieve its assumed benefits (herein referred to as "back-up projects"). Recommended projects are included in Valley Water's water rates forecast while back-up projects are not included in Valley Water's water rates forecast. With the MAP demand forecast, the potential overinvestment in the Master Plan may be more acute. LVE and Sites both have cost-share decisions being considered by the Board on November 17, 2020. Therefore, Valley Water is re-evaluating participation in Sites (a back-up project) and LVE (Transfer Bethany Pipeline is a recommended project) considering the MAP demands.

Figure 1. Master Plan Investment Strategy and Recommended Projects

MASTER PLAN'S "ENSURE SUSTAINABILITY STRATEGY"

- 1) Secure existing supplies and infrastructure:
 - a. Continue baseline projects (Vasona Pump Plant Upgrade, Rinconada Water Treatment Plant Reliability Improvement, dam seismic upgrades)
 - b. SWP portion of the Delta Conveyance Project (DCP)
- 2) Expand water conservation and reuse:
 - a. 24,000 acre-foot (AF) potable reuse project
 - b. Achieve 110,000 AF of conservation by 2040 (represents an additional 11,000 AF of conservation above the baseline).
- 3) Optimize the use of existing supplies and infrastructure:
 - a. Pacheco Reservoir
 - b. Transfer Bethany Pipeline

Los Vaqueros Expansion Project

The LVE Project would expand Los Vaqueros Reservoir storage from 160 thousand acre-feet (TAF) to 275 TAF and build the Transfer-Bethany Pipeline to connect the reservoir to the State Water Project (SWP) South Bay Aqueduct (SBA) and the California Aqueduct. The LVE Project may provide Valley Water regional storage, new water through CCWD's diversion rights, and increased operational flexibility in the conveyance of imported water. Valley Water is considering a Second Amendment (A2) to the 2019 Multi-Party Agreement (MPA) to continue project development through 2021 with an additional cost share of between approximately \$800,000 and \$1 million. Funding will go towards making progress on permits, design, preparing services agreements, and the formation of the JPA. Valley Water presented A2 to the Water Storage Exploratory Committee (WSEC) in July and August 2020 and is scheduled to bring A2 to the full Board for consideration on November 17, 2020. Given the potential operational flexibility that the regional storage and conveyance of the project may provide, Valley Water staff recommends that the Board approve continued participation in the next phase of the project.

Through June 2020, Valley Water has spent approximately \$618,000 towards LVE Project cost-sharing for the WSIP application and project development, including in-kind labor costs. CCWD estimates the total LVE Project

development and construction 40-year life cycle costs to be \$868 million in constant 2018 dollars (\$513 million for storage and \$355 million for conveyance). The California Water Commission approved a Proposition 1 Water Storage Investment Program (Prop 1 WSIP) grant award of up to \$459 million for the LVE Project, including \$22.95 million in early funding. The U.S. Bureau of Reclamation (USBR) received \$2.155 million of federal funding for the LVE Project through the Water Infrastructure Improvements for the Nation (WIIN) Act for Fiscal Year (FY) 2020. CCWD and local area partners (LAPs) (Attachment 1) are continuing efforts to procure additional WIIN Act funding beyond FY 2020, ultimately seeking \$223 million in total. The rest of the project funding would come from the LAPs.

LVE Storage and Conveyance

Valley Water continues to work with CCWD and the LAPs to evaluate long-term participation levels, how it translates to water storage and/or supply benefits, costs, and risks. Many of these potential benefits depend on if and how much Valley Water participates in project storage or Transfer-Bethany Pipeline conveyance components. In addition, Valley Water is working with regional partners to evaluate how storage and conveyance components could support other regional projects, such as the Bay Area Regional Desalination Project and the Refinery Recycled Water Project.

Prior to the recent MAP report, Valley Water was working with CCWD to evaluate LVE storage as a means to diversify Valley Water's out-of-county storage program or as a storage project that is in addition to our Water Supply Master Plan (WSMP) 2040 proposed investments (Figure 1). However, given the new demand forecast, Valley Water now recommends evaluating the project storage component solely as means to diversify Valley Water's storage program. The strategic location of LVE storage may provide Valley Water an operational and emergency benefit; Valley Water staff are currently evaluating this option considering the revised demands.

Valley Water completed the preliminary evaluation of using LVE storage in addition to the recommended Master Plan projects (Table 1). Given Valley Water's significant investments in storage (i.e., local groundwater and surface water storage and Semitropic Water Bank storage), its ability to utilize carryover storage in San Luis Reservoir, and the inclusion of Pacheco Reservoir project in the WSMP 2040 investment portfolio, the evaluation indicated Valley Water rarely filled LVE storage. However, if LVE storage is operated to diversify and add flexibility to Valley Water's storage program, Valley Water may be able to better exercise the storage in LVE. Concept level costs in Table 1 also do not account for the recently negotiated reduced user fees for the CCWD and East Bay Municipal Utility District (EBMUD) existing infrastructure. A new cost evaluation is expected from CCWD in December 2020. "Valley Water expects the project benefit to potentially increase if used to diversify from existing storage projects and the costs to decrease compared to those reported in Table 1."

Table 1. Storage of Valley Water Supplies in LVE¹ (Concept level costs)

<i>Preliminary Analysis</i>	Dedicated Storage (30 TAF)	Pooled Storage (up to 20 TAF)	Transfer Bethany Only⁵
PV Life Cycle Cost to Valley Water (2019\$) ²	\$200 Million	\$50 Million	\$50-250 Million
Average Storage Volume ³ (TAF/yr)	13	3	-
PV life cycle unit cost (\$/AF) ^{2,4}	\$1,000	\$1,300	\$700

¹ Costs and impacts shown only for LVE storage components, based on values from Valley Water's Water Evaluation and Planning (WEAP) model and CCWD's CalSim II model and Proforma 3.0 financial model.

² Present Value (PV) life cycle cost calculated using Valley Water's 100-year life cycle cost methodology. LAPs have negotiated lower usage fees and CCWD is updating their financial model; Valley Water expects this to lower storage and conveyance costs.

³ Average volume held in storage by Valley Water over 83-year CalSim II model period.

⁴ Unit cost is calculated using the 100-year life cycle cost and the life cycle usable project supplies

⁵ Assumes between a 1% to 7% share of Transfer Bethany Pipeline capacity.

Apart from storage, LVE includes the Transfer-Bethany Pipeline, which could potentially provide Valley Water additional operational flexibility and access to new water during wetter years. Preliminary model analysis of current LAP participation levels and planned infrastructure capacities suggest that Valley Water could use up to approximately 7% of the pipeline capacity. The current evaluation shows conveyance through Transfer Bethany Pipeline costs Valley Water approximately \$700 per AF and that Valley Water could have access to up to 6 TAF of new water during years with surplus conditions in the Delta. More analysis is underway to refine costs given the

updated usage fees and to determine if and how Valley Water could benefit from increased Transfer-Bethany Pipeline use, such as to convey imported water supplies other than Delta surplus and water stored in LVE (e.g., direct delivery of Central Valley Project [CVP] or SWP contract water, refinery recycled water exchange project water, etc.). This information will inform the JPA service agreements and Valley Water staff will provide this analysis to the WSEC for feedback to inform the service agreements discussions during 2021 and early 2022. JPA service agreements would be presented to the Board for consideration in late 2021 and early 2022.

LVE Cost Share through December 2021

The current project agreement executed on April 30, 2019 between CCWD and the LAPs included a cost-share commitment to expire on June 30, 2020. Valley Water signed the MPA Amendment 1 (A1) in June 2020 to extend the existing agreement through December 31, 2020. A1 was only a time extension and did not require any additional cost share. To continue project development through to when the JPA is formed, CCWD is requesting partners sign MPA A2 (Attachment 2). A2 extends the MPA through December 31, 2021, includes a revised scope of work, and requires an additional cost share to cover project costs through December 2021. The total cost for A2 is approximately \$6.1 million and the cost share to Valley Water is expected to be approximately between \$800,000 to \$1 million, depending on the number of LAPs that continue participation and the allocation approach. The allocation proposal is to share the total cost equally among the LAPs, same as the allocation approach in the MPA. The additional cost share in A2 will fund: JPA formation, preparation of service agreements, developing permits and agreements necessary to secure full WSIP funding, operational or conveyance issues identified by LAPs (e.g., SBA conveyance), 90% level of LVE Project design, and other critical path items as required. Executing A2 includes no commitment to join the JPA. Given that A2 is requesting a significant financial commitment, CCWD proposes to split the cost share into four payments: when the amendment is executed, November 2020, March 2021, and July 2021. If approved in November, the first two payments would be due. There are provisions that allow LAPs to withdraw at any time, and if a decision to withdraw is made prior to any one of the payment due dates, those future payments would not need to be made.

Sites Reservoir Project

Sites is a proposed new 1.5 million AF off-stream reservoir that would be located north-of-Delta (NOD), approximately 10 miles west of the town of Maxwell in Colusa County. Sites may provide Valley Water new storage, new Delta-conveyed water supplies, improved CVP/SWP reliability, and increased operational flexibility.

Second Amendment to 2019 Project Agreement

Valley Water is considering a Second Amendment to the 2019 Reservoir Project Agreement with Sites Project Authority (Sites A2) (Attachment 3) to support continued Phase 2 work activities from June 2020 through December 2021 (Phase 2, Years 2 and 3) based on a specific participation level. Execution of the Sites A2 obligates Valley Water to provide funding for continued work on Phase 2 of the Sites Project, provides Valley Water with a continuing seat on the Sites Reservoir Committee through December 2021, and gives Valley Water priority access to proportional water supply and storage benefits provided by the project.

The total budget for work from September 2020 through December 2021 is roughly \$40 million, of which about \$19 million is to be funded by participants through execution of Sites A2. The remaining budget is expected to be funded using Prop 1 WSIP early funding and funds secured from provisions under the WIIN Act.

Funding for Sites A2 will go towards completing draft EIR/EIS documents for public comment, developing guidelines for coordinated operations of Sites with the SWP and CVP, acquiring permits, developing the feasibility design, evaluating water rights issues, and further developing of Sites project policies and governance. The next phase is critical for satisfying requirements to secure Prop 1 WSIP funding.

To date, all participants except Valley Water have agreed to continue participation in the project. Attachment 4 lists the existing participants and their requested yields as well as two new potential participants. The Sites Project Authority requested a decision on project participation from Valley Water by November 2020. Valley Water presented Sites A2 to the Committee in July and August 2020 and is scheduled to bring Sites A2 to the full Board for consideration on November 17, 2020.

After execution of Sites A2, Valley Water can withdraw from the agreement with at least 30 days written notice. A withdrawing member would still be responsible for paying costs approved prior to the date of written notice of withdrawal.

Sites Participation Level

The Board approved a requested yield of 16,000 AF from the Sites project in February of 2019, which corresponds to a 3.2% participation level in the original \$6 billion project. Since that time, the project has been downsized from a 1.8 million AF to a 1.5 million AF storage facility, with a capital cost reduction from \$6 billion to \$3 billion. Staff evaluated several options for continued participation (Table 2):

- *Option 1 – Reduce but maintain significant benefits:* This option reduces Valley Water's requested yield from 16,000 AF to 7,800 AF while maintaining a 3.2% overall participation level in the downsized project.
- *Option 2 – Reduce participation by half:* This option reduces Valley Water's participation in the total project from 3.2% to 1.6%. This corresponds to a requested yield of 4,000 AF.
- *Option 3 – Reduce to a minimal participation level:* This option reduces Valley Water's requested yield to 500 AF, a level that does not provide significant benefits but that can maintain Valley Water's participation in the Sites Reservoir Project Committee, the governing body under the Sites JPA that is developing the project. This corresponds to a participation level in the total project of 0.2%.
- *Option 4 – Withdraw from the project:* Under this option, Valley Water would withdraw completely from the project.

Should Valley Water reduce or withdraw its participation, it may be possible to rejoin in the future if there is unsubscribed participation in the Project; however, reinstating first priority rights to the project benefits would be subject to approval of the Sites Project Reservoir Committee.

Sites may potentially provide significant quantities of additional water supply, storage, and operational flexibility. However, the current suite of water supply investments prioritized in the Master Plan, when coupled with the reduced demand forecast presented in the MAP, far exceed Valley Water's level of service goal. In addition, the Master Plan considers the Sites project as an alternative to the Delta Conveyance Project, which was a Master Plan recommended project, if the Delta Conveyance Project does not ultimately move forward. Therefore, staff is recommending Option 3, which includes a 0.2% participation in Sites. Staff recommends Option 3 rather than completely withdrawing to allow Valley Water time to better evaluate Valley Water's water supply reliability needs within the context of the new demands, re-evaluate Master Plan project costs and risks, and refine Valley Water's evaluation of Sites' and Master Plan projects' benefits and constraints.

Table 2: Comparison of Participation Options for the Sites Reservoir Project with Concept Level Costs

	Option 1	Option 2	Option 3	Option 4
	Maintain Participation	Reduce Participation in Half	Reduced Participation	Withdraw from Participation
PARTICIPATION SIZE				
Valley Water Share of Total Project Cost and Benefit	3.20%	1.60%	0.20%	0.00%
Valley Water Participation Request (AF) ¹	7,800	4,000	500	0
PRELIMINARY ESTIMATED BENEFITS (STORAGE AND YIELD)				
Valley Water Average Delivered Yield (AF) ²	4,700 to 6,100	2,400 to 3,100	300 to 390	0
Valley Water Storage Share (AF)	45,000	23,000	2,800	0
CONCEPT LEVEL COST				
Valley Water Share of Total Capital Cost (Fully Inflated Dollars) ³	\$125 Million	\$64 Million	\$8 Million	\$0 Million
Estimated Levelized Unit Cost (constant 2020 dollars/AF) ⁴	\$600-800	\$600-800	\$600-800	-
PV Lifecycle Unit Cost (\$/AF) ⁵	\$1,100-1,400	\$1,100-1,400	\$1,100-1,400	-
Valley Water Funding Commitment	\$780 thousand	\$400 thousand	\$50 thousand	\$0

¹Value requested and used by Sites Project managers to calculate participation levels relative to other participants. Actual annual yield of the project will differ from participation level.

² Delivered yield assumes a 25% carriage water loss.

³ Total Capital Cost published by the Sites Project were fully inflated by Valley Water financial staff to determine estimated construction costs.

⁴ Levelized unit cost of water is the cost that, if assigned to every acre-foot of water produced (or saved) by the project over the operational period, will produce sufficient revenue to recover the cost of the project in present value terms. Calculated using Valley Water's 100-year life cycle cost, inputs from Sites Value Planning Report financial model, and preliminary estimated delivered yield to Valley Water.

⁵ PV lifecycle unit cost is calculated using the Valley Water 100-year life cycle cost and the life cycle usable project supplies. Usable project supplies is the portion of the preliminary estimated delivered yield that can be used by Valley Water to meet demands.

The allocation of costs to the Sites Reservoir Committee members is outlined in the Sites A2. Maintaining Valley Water's participation level of 3.2% of total project (Option 1) would commit Valley Water to provide \$780,000 in funding; a participation level of 1.6% of total project (Option 2) would commit Valley Water to provide \$400,000 in funding; a participation level of 0.2% of total project (Option 3) would commit Valley Water to provide \$50,000 in funding; and a withdrawal from participation (Option 4) would commit Valley Water to no additional funding. This correlates to a commitment by Valley Water of \$100 dollars in funding per AF of participation. The Sites A2 funding is payable in two payments, with \$60 dollars per AF due in November 2020 and up to \$40 per AF due in April 2021.

On September 18, 2020, the Board received a non-agenda packet containing a memorandum on Sites which provides additional information on the planning level project financial analysis performed in development of the

preliminary estimated 100-year levelized unit cost for this project. A copy of this memorandum is provided as Attachment 5.

Past Sites Project Funding

Through September 2020, Valley Water has spent approximately \$1.96 million towards Sites cost-sharing for the Prop 1 WSIP application and project development. The California Water Commission approved a Prop 1 WSIP grant award of up to \$816 million for Sites, including \$40.82 million in early funding. The USBR received a total of \$10 million of federal funding for Sites through the WIIN Act. The U.S. Department of Agriculture approved a \$449 million loan for the Site's Maxwell water intertie conveyance facilities. Sites and project partners are continuing efforts to procure additional funding beyond 2021.

The Sites Project Authority, a joint powers authority, has adopted a credit reimbursement policy that provides for reimbursement to participants that reduce their participation level or withdraw from the project prior to Phase 3, provided that (1) the withdrawal is offset by additional funding provided by others, and (2) such reimbursement does not have an adverse impact on the financial viability or overall implementation of the project. Depending upon overall funding and support for the project, the policy may allow for partial or full reimbursement of Valley Water's past payments if Valley Water reduces or withdraws participation. If funding for the project is inadequate, Valley Water would not be reimbursed.

Next Steps

LVE project construction is expected to start in 2022, with the Transfer-Bethany Pipeline being constructed from 2023-2025. The Los Vaqueros dam raise, pumping facilities upgrades, and other conveyance improvements will be completed between 2027-2029.

In order to continue participating in LVE and Sites, Valley Water need to agree to project contract amendments and associated cost share agreements. For the LVE cost share agreement, Valley Water can withdrawal from the project at any time and not pay any of the future cost-share payments. The LVE cost-share funds project needs through 2021. Once the JPA is formed (which is expected in early 2021), the JPA will develop future cost-share agreements that would start January 2022. For Sites, the cost share funds the project through December 2021.

Over the next two years, Sites and LVE has many key decision points and milestones (Attachment 6). If the Board decides to continue participation in LVE and/or Sites, Valley Water will continue to track the key decision points and will return to the WSEC with project updates regularly.

The Committee (Directors Kremen, Santos and Varela) discussed the following: staff recommendations, JPA Agreement, long-term dependent on the Delta Conveyance, costs if Valley Water did not participate and impacts if agency chooses to participate at a later date, need to do a cost analysis, is staff time included in recommendations, and reminder to have electeds (Kremen/Santos), legal and staff present at the discussions.

Mr. Steve Jordan commended staff on a clear/concise presentation on LVE. Question on amount of project demand, bringing in options in case reduction happens and BAWSCA withdrew but pays through SFPUC.

Mr. Brian Hopper was available to answer questions.

The Committee took the following action.

The Committee unanimously approved that the Board consider the Committee's recommendation from staff:

- A. Receive and discuss Monitoring and Assessment Program 2020 information regarding the Los Vaqueros Reservoir Expansion Project, including the Transfer-Bethany Pipeline, and the Sites Reservoir Project.
- B. Recommend the Board consider authorizing the CEO to execute Amendment 2 to the 2019 Multi-Party Agreement for Los Vaqueros Reservoir Expansion Project, which includes a contract extension through December 2021 and a cost-share not to exceed \$1,013,661
- C. Recommend the Board consider authorizing the CEO to execute the Second Amendment to 2019 Reservoir Project Agreement for Sites Reservoir project for continued participation through December 2021 at a 0.2% participation level and funding commitment of \$50,000.

Staff Analysis:

Staff agreed with the Committee's recommendation and the items were brought to the Board on November 17, 2020 for approval.

If you have any questions or concerns, you may contact me at, gbrambill@valleywater.org or 1.408.630.2408.

Thank you.

Glenna Brambill, Management Analyst II,
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