



MEMORANDUM

TO: SLDMWA Water Resources Committee/Board of Directors, Alternates

FROM: Pablo Arroyave, Chief Operating Officer

DATE: September 13, 2021

RE: Water Resources Committee to Consider Recommendation to Board of Directors to Select an Operational Configuration for the B.F. Sisk Dam Raise and Reservoir Expansion Project in the Addendum to the Feasibility Study

BACKGROUND

Since 2019, the U.S. Bureau of Reclamation (Reclamation) and the Water Authority have been completing the steps necessary to evaluate and ultimately implement the B.F. Sisk Dam Raise and Reservoir Expansion Project (project). The project is estimated to provide an additional 130,000 acre-feet of water storage capacity in San Luis Reservoir by raising the crest height of B.F. Sisk Dam by 10 feet. The project is being pursued under the Reclamation Safety of Dams Act (Pub. L. 95-578, as amended) as a connected action to Reclamation's B.F. Sisk Dam Safety of Dams (SOD) Modification Project which proposes raising the height of B.F. Sisk Dam for Dam Safety purposes. As a "connected action" under the amended Safety of Dams Act, Reclamation must determine and affirm that the Water Authority's interest in increasing water storage supply in San Luis Reservoir provides an additional benefit in conjunction with the current B.F. Sisk Dam SOD Modification Project, is consistent with Reclamation Law, can support a Secretary of Interior's finding of feasibility, has federal benefits pursuant to the Water Infrastructure Improvements for the Nation (WIIN) Act, and can be accomplished without negatively impacting the B.F. Sisk Dam SOD Modification Project. The Final Environmental Impact Report/Supplemental Environmental Impact Statement (EIR/SEIS) and the final Feasibility Report for the project were completed in December 2020. The final Feasibility Report was submitted for review to the U.S. Office of Management and Budget and subsequently transmitted to Congress with a Secretary of Interior finding of feasibility.

In addition to the Safety of Dams authority, Reclamation is pursuing this project as a federally led storage project within the WIIN Act authorization. As a federally led storage project, the Federal Government could fund the project in the amount associated with the percentage of federal benefits, both reimbursable and non-reimbursable, up to 50% of the overall project cost. The Federal Government may fund less than 50% of the project cost with a corresponding benefit of less than 50%. The current federal benefits identified in the Feasibility Report are increases in irrigation, municipal and industrial and refuge water supply deliveries and the transportation

safety benefits generated by modifications to State Route 152. The refuge water supply deliveries and transportation safety benefits are both identified in the Feasibility Report as non-reimbursable benefits.

In considering the 2020 Feasibility Report, OMB required that an addendum to the report be completed prior to the commencement of project construction providing the cost allocation for the additional water supply with supporting economic analysis. To develop the cost allocation, Reclamation and the Water Authority are pursuing the selection of one of the specific operational configurations (sub-alternatives) analyzed in the 2020 Feasibility Report. In addition to the operational configuration selection, the addendum will include the following additional information:

1. An update to the 2016 Reclamation Sisk Dam Raise cost estimates (to 2021 levels);
2. The selection of a specific methodology to illustrate the transportation safety benefits of the project; and
3. The associated water supply benefits for the selected operational configuration

Draft Participation and Operations Terms Proposed by Reclamation

Given the 130,000 acre-feet of increased water storage space in San Luis Reservoir associated with the project, Reclamation initially identified 50% (65,000 acre-feet) of that storage to be treated as an extension of available CVP supply (CVP-only) and the remaining 50% (65,000) to be managed by the participating districts (investor-directed).

As part of the initial concept, Reclamation also proposed key assumptions for consideration, including but not limited to:

- Operation of the additional space will have no impact to existing CVP contractors;
- The additional space will be operated to maximize CVP project benefits; and
- The investor directed portion of the storage will have a higher level of protection and spill priority than the storage within the current rescheduling guidelines.

In response to OMB's requirement above, the selection of the specific assignment of the investor-owned storage has been the focus of attention with a Water Authority-led technical team, and is the crux of the current effort. The three specific configurations of the investor-owned storage presented for consideration are:

- a. 78% Ag/7% M&I/15% Refuge
- b. 10% Ag/90% M&I
- c. 70% Ag/15% M&I/15% Refuge

Because a-b above are the bookends analyzed in the Feasibility Report and the corresponding environmental document, operational configurations with different percentage allocations of Ag, M&I and Refuge can be identified. If this is the case, additional analysis and modeling will need to occur to develop the associated supporting economic analysis.

ISSUES FOR DECISION

1. Whether Reclamation’s proposal for the additional 130,000 acre-feet storage capacity being assigned 50% CVP-only and 50% investor-owned is an acceptable ratio for the project.
2. Whether the Water Authority should select one of the three specific operational configurations identified above, or an alternative configuration.

ADDITIONAL INFORMATION

In order to meet the conditions within the WIIN Act authorization and coordination with SOD Modification implementation, construction of the project must commence in early 2022 to allow the project to align with Reclamation SOD Modification. Therefore, in order to be eligible for WIIN funding, the required addendum must be completed during the fall of 2021. In this case, the construction phase is currently being defined by Reclamation as the commencement of final design, including initiating geotechnical investigations. In accordance with the WIIN Act, prior to commencement of construction, a cost share agreement must be developed and executed.

In order to compare the three specific operational configurations, the modeled water supply benefits associated with each are below by water year type:

Additional South of Delta CVP Delivery (1,000 acre-feet)

	Sub-alternative	Water Year Type					
		W	AN	BN	D	C	All
Total SOD CVP	Sub-Alt A/C	31	39	58	31	23	35
	Sub-Alt B/D	29	36	56	34	25	35
	New Investor Sub-Alt	31	38	58	32	23	35
SOD CVP M&I	Sub-Alt A/C	1	2	3	2	1	2
	Sub-Alt B/D	6	7	16	16	13	11
	New Investor Sub-Alt	1	2	4	3	3	2
SOD CVP Ag	Sub-Alt A/C	28	35	52	28	20	31
	Sub-Alt B/D	23	29	40	19	12	24
	New Investor Sub-Alt	28	35	51	27	19	30
SOD CVP Refuge	Sub-Alt A/C	1	2	3	2	2	2
	Sub-Alt B/D	0	0	0	0	0	0
	New Investor Sub-Alt	1	2	3	2	2	2

Notes:

1. All examples above allocate 65 TAF of new storage in San Luis Reservoir to all SOD CVP water users consistent with the existing reservoir, and the other 65 TAF to investors in the project
2. The investor supplies are allocated as follows: Investor A/C - 78% Ag / 7% M&I / 15% Refuge; Investor B/D - 10% Ag / 90% M&I; New Investor - 70% Ag / 15% M&I / 15% Refuge
3. The results indicate total changes in South of Delta CVP deliveries not just deliveries specific to the different investor groups

Completion of the addendum to the Feasibility Report also requires completion of an initial cost allocation process. The methodology required for this allocation is prescribed by Reclamation for all feasibility studies. It is expected that all operational configurations will have a benefit/cost ratio higher than 1.0. Per this initial cost allocation methodology, benefits that are monetized for this project are:

- a. Increased M&I water supply reliability
- b. Increased Irrigation water supply reliability
- c. Enhanced emergency M&I water supply reliability
- d. Increased Incremental Level 4 Refuge Supply
- e. Seismic Improvements to SR-152 (Transportation Benefit)

As noted above, d-e are considered non-reimbursable federal benefits and a-c are considered reimbursable to the project beneficiaries.

FINANCIAL AND OTHER IMPLICATIONS

Members of the Water Authority technical team have expressed concerns with the initial cost allocation in the Feasibility Report and the bearing this initial cost allocation will have in the final cost allocation once construction commences. There are several policy decisions to be addressed by Reclamation and the Water Authority that could have a bearing on specific investor benefits that could therefore change the participation levels of specific member agencies and could affect the final cost allocation. In addition, the final determination of federal benefits and the split of reimbursable versus non-reimbursable may affect participation as well. For example, if final federal benefits realized are less than 50%, that could result in additional investment potential for some member agencies. In order to address these concerns, the Water Authority staff is coordinating with Reclamation regarding a number of key questions.

Water Authority staff will continue to engage Reclamation on the questions provided and will keep the technical team, Water Resources Committee, and Board of Directors informed of progress.

ATTACHMENTS

PowerPoint Presentation
Analysis of Alternatives and Modeling Results

B.F. Sisk Dam Raise Project

Water Resources Committee Meeting

September 13, 2021



**CDM
Smith**

Meeting Overview

- Reservoir Operational Configuration Benefits
- Operational Configuration Selection

New Reservoir Operational Configurations

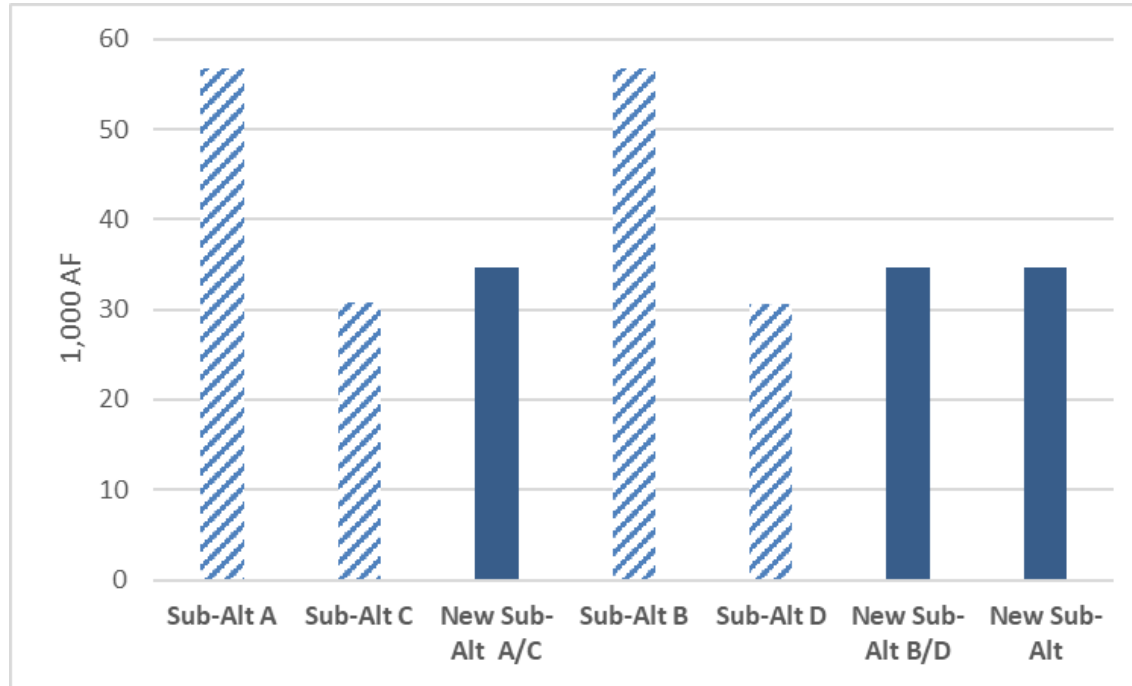
- The Feasibility Report Addendum will evaluate a single reservoir operational configuration.
- Currently three configurations are identified and have been modeled. All three configurations incorporate Reclamation's requested storage split –
 - 65 TAF of expanded storage assigned to all SOD CVP contractors consistent with existing reservoir
 - 65 TAF of expanded storage assigned to investors with corresponding increase in the rescheduling limit
- Three investor mixes are now being evaluated to identify benefits for the 65 TAF of investor storage:
 - 78% Ag / 7% M&I / 15% Refuge (Investor A/C)
 - 10% Ag / 90% M&I (Investor B/D)
 - 70% Ag / 15% M&I / 15% Refuge (New)

New Reservoir Operational Configuration Benefits

- Preliminary CalSim and post processing tool modeling of the new reservoir operational configurations has been completed
- This modeling included adjustments to the post processing tool to account for operational guidance/targets described in Reclamation's August 2021 Draft Participation and Operations Terms for the Project
 - No negative impact to existing CVP contractors
 - Operated to maximize CVP project benefits
 - Spill priority and/or protection for Investor storage (65 TAF)
- Economic modeling of preliminary water supply benefits is now underway

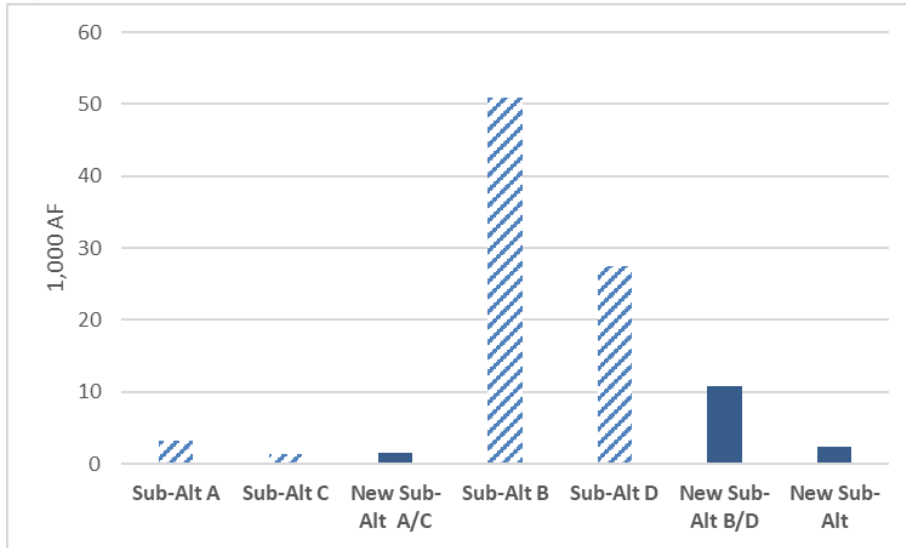
New Reservoir Operational Configuration Benefits

- Change in Annual Average CVP SOD Deliveries

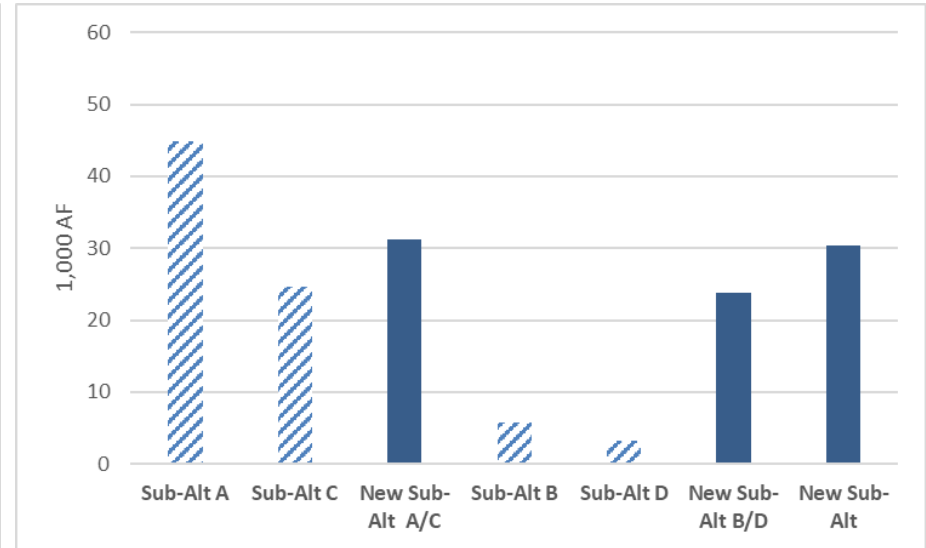


New Reservoir Operational Configuration Benefits

- Change in Annual Average CVP SOD M&I and Ag Deliveries



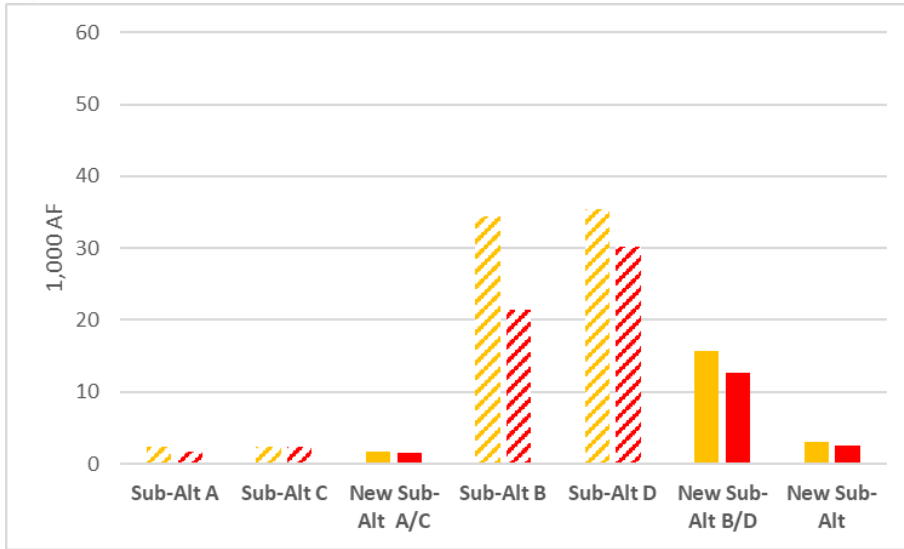
M&I Water Supply Benefits



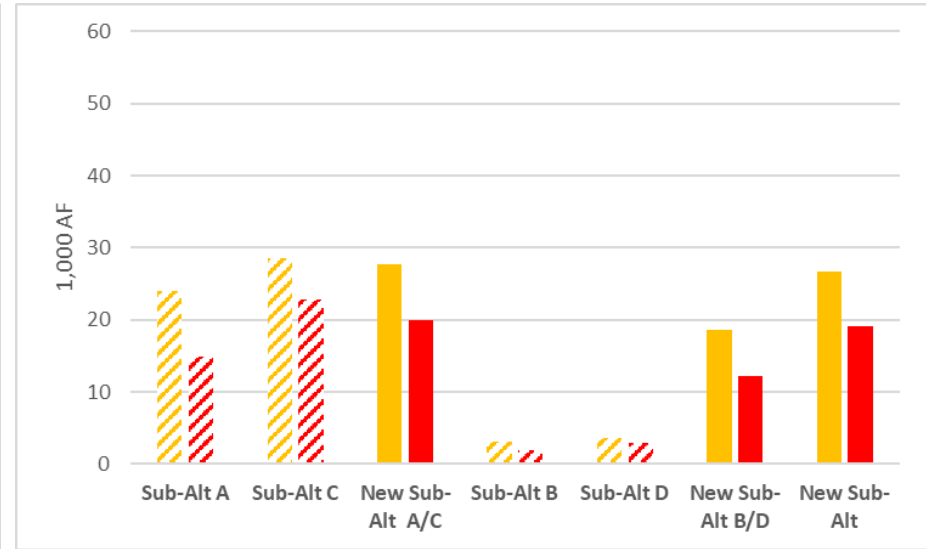
Ag Water Supply Benefits

New Reservoir Operational Configuration Benefits

- Change in Dry and Critical Year CVP SOD M&I and Ag Deliveries



M&I Water Supply Benefits



Ag Water Supply Benefits



Operational Configuration Selection

Reservoir Operational Configuration Selection

- The December 2020 Final Feasibility Report did not identify a selected operational configuration for the expanded reservoir.
- OMB's review of the December 2020 Final Feasibility Report generated a finding requiring identification of a selected configuration prior to the initiation of construction by Reclamation
- Feasibility Report Addendum will evaluate the technical, environmental, economic and financial feasibility of the preliminary selected operational configuration



Reservoir Operational Configuration Selection

- The evaluation of economic feasibility will include the development of a new benefit-cost ratio for the selected configuration
- The evaluation of financial feasibility will include an updated initial cost allocation and ability to pay analysis
- Preliminary evaluation of the new operational configurations has identified federal benefits covering app. 30% of total project cost that could be allocated as non-reimbursable



Reservoir Operational Configuration Selection

- The selection of the Project for FY 2022 Water Infrastructure Improvements for the Nation (WIIN) Act funding under Section 4007 of the WIIN legislation is anticipated
- Section 4007 requires development and execution of cost share agreement that would be supported by the Addendum late in CY 2021



Next Steps

- The current Feasibility Report Addendum schedule is targeting completion of the 1st Administrative Draft in October to support the multiple required Reclamation reviews prior to the fall 2021 deadline
- Selection of the preliminary operational configuration will require SLDMWA BOD review and approval





Questions



Memorandum

Date: September 9, 2021

Subject: B.F. Sisk Dam Raise Project – Water Supply Benefits Update

2020 Feasibility Report Alternatives

In the 2020 B.F. Sisk Dam and Reservoir Expansion Project Feasibility Report six operational configurations were evaluated under the Dam Raise Alternative Plan. These subalternatives were formulated as “bookends” to capture the range of stakeholder-requested configurations, evaluate the potential water supply benefits generated by those configurations and identify their potential environmental effects.

Under the CVP-Only Storage Subalternative the additional storage in San Luis Reservoir would be Reclamation-owned CVP storage and would be operated consistent with current CVP operations. Based on a review of historical rescheduling quantities and the most recent annual rescheduling guidelines, an upper quantity of 180 thousand acre-feet (TAF) was used to estimate the aggregate total of carried-over water in high-allocation water years.

Under the CVP/SWP Split Storage Subalternative the additional storage would be split between the CVP and SWP, consistent with the current 45 percent CVP and 55 percent SWP split of the overall reservoir storage. The additional storage would follow current operating criteria and the storage priority will follow the current rescheduling guidelines.

Under the Investor-Directed Storage Subalternative’s four operational configurations, the use of the proposed storage (expanded capacity) would be primarily investor-directed. Investors could store allocated CVP Project water, carried-over water, and non-Project water in the expanded capacity. Investors would have first priority in storing carried-over water and non-Project water in the expanded capacity without the risk of “spill.”

The upper target quantity of carried-over water in San Luis Reservoir for Configurations A and B would be 180 TAF. This target quantity was increased to 310 TAF under Configurations C and D. The delivery of CVP project water and the capacity for carryover was allocated for Configurations A and C proportionally among the SLDMWA investor group at 78% to agriculture, 7% to M&I, and 15% federal refuge water users. Configurations B and D were allocated proportionally at 90% to M&I and 10% to agriculture water contractors.

2021 Feasibility Report Addendum Alternatives

In the B.F. Sisk Dam and Reservoir Expansion Project Feasibility Report Addendum, three new operational configurations were evaluated under the Dam Raise Alternative Plan. Under all of the configurations the additional storage would be split between the CVP and investors, with 65 TAF controlled by the CVP and 65 TAF investor-directed. All three configurations included were evaluated with a 65 TAF increase in the reservoir’s rescheduling target. That 65 TAF of increased rescheduling capacity was evaluated differently from the existing rescheduled supply in the reservoir with a protection against spill.

The delivery of CVP project water and the capacity for carryover under configuration INVAC was allocated proportionally among the SLDMWA investor group at 78% to agriculture, 7% to M&I, and 15% federal refuge water contractors.

The delivery of CVP project water and the capacity for carryover under configuration INVBD was allocated proportionally among the SLDMWA investor group at 90% to M&I and 10% to agriculture water contractors.

The delivery of CVP project water and the capacity for carryover under the new reservoir operational configuration NewINV was allocated proportionally among the SLDMWA investor group at 70% to agriculture, 15% to M&I, and 15% federal refuge water contractors.

M&I Water Supply Reliability Benefits

The incremental change in annual M&I water supply reliability under the action alternatives relative to the No Action Alternative is the basis for M&I water supply reliability benefits. The hydrologic model results provide the quantity of water available under the No Action and action alternatives’ multiple operational configurations. Table 1 presents the estimated annual M&I water supply reliability benefits for the configurations evaluated in the 2020 Feasibility Report, and Table 2 presents the preliminary results identified for the configurations under evaluation in the Feasibility Report Addendum.

Table 1. Average Annual M&I Water Supply Benefits Provided by the 2020 Feasibility Report Dam Raise Subalternatives

Alternative Plans	NED M&I Water Supply Reliability (TAF/year)
CVP Only	2
CVP/SWP Split	1
Investor-Directed Storage Subalternative A	3
Investor-Directed Storage Subalternative B	51
Investor-Directed Storage Subalternative C	1
Investor-Directed Storage Subalternative D	27

Table 2. Average Annual M&I Water Supply Benefits Provided by the 2021 Addendum Dam Raise Subalternatives

Alternative Plans	NED M&I Water Supply Reliability (TAF/year)
INVAC	2
INVBD	11
NewINV	2

Irrigation Water Supply Reliability Benefits

The incremental change in annual irrigation water supply under the action alternatives relative to the No Action Alternative is the basis for irrigation water supply reliability benefits. The hydrologic model results provide the quantity of water available under the No Action and action alternatives. Table 3 presents the estimated annual irrigation water supply reliability benefits for the configurations evaluated in the 2020 Feasibility Report, and Table 4 presents the preliminary results identified for the configurations under evaluation in the Feasibility Report Addendum.

Table 3. Average Annual Irrigation Water Supply Benefits Provided by the 2020 Feasibility Report Dam Raise Subalternatives

Alternative Plans	NED Irrigation Water Supply Reliability (TAF/year)
CVP Only	49
CVP/SWP Split	24
Investor-Directed Storage Subalternative A	45
Investor-Directed Storage Subalternative B	6
Investor-Directed Storage Subalternative C	25
Investor-Directed Storage Subalternative D	3

Table 4. Average Annual Irrigation Water Supply Benefits Provided by the 2021 Addendum Dam Raise Subalternatives

Alternative Plans	NED Irrigation Water Supply Reliability (TAF/year)
INVAC	31
INVBD	24
NewINV	30

Enhanced Emergency M&I Water Supply Benefits

The B.F. Sisk Dam Raise Alternative Plans provide emergency water supply benefits from increased storage. Emergency storage benefits are increased supplies stored in reservoirs that can be delivered in the event of a major levee failure in the Delta that would significantly degrade water quality, or a major earthquake that would disrupt the ability of SLDMWA to import water into their service area. Table 5 presents the estimated enhanced emergency M&I water supply reliability benefits for the configurations evaluated in the 2020 Feasibility Report, and Table 6 presents the

preliminary results identified for the configurations under evaluation in the Feasibility Report Addendum.

Table 5. Estimated Enhanced M&I Emergency Water Supply Benefits Provided by the 2020 Feasibility Report Dam Raise Subalternatives

Alternative Plans	Emergency Supply (TAF)
CVP Only	28
CVP/SWP Split	17
Investor-Directed Storage Subalternative A	31
Investor-Directed Storage Subalternative B	31
Investor-Directed Storage Subalternative C	63
Investor-Directed Storage Subalternative D	63

Table 6. Estimated Enhanced M&I Emergency Water Supply Benefits Provided by the 2021 Addendum Dam Raise Subalternatives

Alternative Plans	Emergency Supply (TAF)
INVAC	51
INVBD	51
NewINV	51

Refuge Water Supply Benefits

The Investor-Directed Storage Subalternatives A and C would provide increased water supply allocations to Grasslands Water District (SLDMWA agency representing the Grassland Resource Conservation District). Table 7 presents the estimated annual refuge water supply reliability benefits for the configurations evaluated in the 2020 Feasibility Report, and Table 8 presents the preliminary results identified for the configurations under evaluation in the Feasibility Report Addendum.

Table 7. Average Annual Refuge Water Supply Benefits Provided by the 2020 Feasibility Report Dam Raise Subalternatives

Alternative Plans	NED Refuge Water Supply Reliability (TAF/year)
CVP Only	--
CVP/SWP Split	--
Investor-Directed Storage Subalternative A	9
Investor-Directed Storage Subalternative B	--
Investor-Directed Storage Subalternative C	5
Investor-Directed Storage Subalternative D	--

Table 8. Average Annual Refuge Water Supply Benefits Provided by the 2021 Addendum Dam Raise Subalternatives

Alternative Plans	NED Refuge Water Supply Reliability (TAF/year)
INVAC	2
INVBD	--
NewINV	2