

Chapter 8

Findings, Considerations, and Recommendations

The Investigation is a feasibility study conducted by Reclamation and CCWD to develop, evaluate, and compare alternatives consistent with the Federal P&G (WRC 1983). A Final EIS/EIR was prepared in 2010 consistent with NEPA and CEQA. Alternative 4 in the 2010 Final EIS/EIR was implemented by CCWD in 2012 (termed Phase 1). Feasibility studies for Phase 2 expansion continued subsequent to implementation of Phase 1. In addition, a Draft Supplement to the Final EIS/EIR, reflecting revised baseline conditions (with implementation of Phase 1) and refined alternatives formulation, was released in July 2017. This chapter summarizes major findings, considerations, and recommendations of the Investigation.

Findings and Considerations

- **Need for the Project** – A compelling need exists to contribute to CVP operational flexibility and reliability, to increase the reliability of water supplies delivered to the Bay Area, and to increase environmental water storage and operational flexibility and secure reliable, long-term water supplies for the management of wildlife refuges. Demands for water in the Central Valley and elsewhere in the State exceed available supplies, especially in dry years and during extended drought, and this condition is expected to become more pronounced in the future. Developing projects to increase the reliability of water supplies for environmental, agricultural, and M&I purposes is necessary to meet demands, and is consistent with the CALFED Programmatic ROD, the CVPIA, and other Federal and State laws and initiatives. The LPP contributes to these needs by providing a reliable, long-term water supply to Refuges, improving the ability of the Refuge Water Supply Program to fulfill Incremental Level 4 water supply obligations in a cost-effective manner. The LPP also provides M&I water supplies for Local Agency Partners, especially during dry years when supplies are most needed.
- **Multiple cost-effective plans** – A range of alternatives were formulated and evaluated to address the study objectives. Three of the Final Alternatives – 1A, 1B, and 4A – have positive net NED benefits. The benefit-cost ratio for Alternative 4A is 1.66; for Alternative 1A is 1.23; and for Alternative 1B is 1.25.
- **Recommended Plan** – Based on evaluation of the potential physical accomplishments and the benefits and costs of the Final Alternatives, Alternative 4A is the alternative that would achieve the highest net NED benefits while protecting the environment and ranks the highest among the Final Alternatives in meeting the P&G criteria. Alternative 1B is identified as the LPP by the non-Federal sponsor, CCWD. CCWD has also submitted an application for State funding of public benefits of Alternative 1B. Both Alternatives 4A

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and 1B were found to be technically, environmentally, economically, and financially feasible, and local project beneficiaries are likely to have the ability to pay for non-Federal costs. The costs of the LPP (Alternative 1B) exceed the costs of the NED Plan (Alternative 4A); therefore, the non-Federal sponsor will be required to pay for the cost of the LPP in excess of the NED. Alternative 1B is identified as the Recommended Plan.

- **Facilities** – The Recommended Plan (Alternative 1B) would include expansion of Los Vaqueros Reservoir to 275 TAF from the current 160 TAF capacity, new conveyance from Transfer Station to Bethany Reservoir, expanded pumping station at Transfer Facility, Neroly High Lift pump station, and replacement of Pumping Plant #1. Additional local facilities, to be implemented independent of any Federal action, include ECCID Intertie Pipeline, the Brentwood Pipeline, and EBMUD Variable Frequency Drives at Walnut Creek Pump Station.
- **Operations** – Under the Recommended Plan (Alternative 1B), new facilities would be operated in combination with existing Los Vaqueros Project facilities to provide water supplies to both Local Agency Partners and Refuges. Available Delta water supplies would be moved through project facilities first to meet Local Agency Partner demands, if any, and then to meet Incremental Level 4 Refuge demands. When system capacity is available, water would also be moved to storage in Los Vaqueros Reservoir for later use in meeting Local Agency Partner and/or Refuge demands. Incremental Level 4 supplies provided by the Recommended Plan would not replace current short- and mid-term acquisitions by the Refuge Water Supply Program; rather, new Incremental Level 4 water provided by the project would be in addition to current acquisitions. During certain conditions, Level 2 Refuge demands could be met by moving Delta surplus flows through project facilities, freeing pumping capacity at Jones Pumping Plant to move additional water to CVP SOD contractors.
- **Water Supply Benefits** – The Recommended Plan (Alternative 1B) would provide increased water supplies to municipal and industrial users, agricultural users, and Refuges, as well as emergency water supplies. Water supplies provided would vary by year type. Municipal and industrial supplies provided to Local Agency Partners are estimated to be about 12.9 TAF/year (long-term average), with deliveries in excess of 42 TAF/year in critical years, when demands are the greatest. Incremental Level 4 water supplies to Refuges are estimated to be about 45.7 TAF/year (long-term average), and as high as 96 TAF/year in wet years. Agricultural water supplies are estimated to be about 1.2 TAF/year (long-term average). The Recommended Plan would also provide an estimated 162 TAF/year (long-term average) of supply available in the event of a regional water supply disruption (emergency water supply).
- **Estimated Costs and Benefits** – The total construction cost of the Recommended Plan (Alternative 1B) is estimated to be \$839.3 million, and the total annual cost is \$46.6 million. The estimated total annual monetary benefit is about \$59.6 million. The net economic benefit is about \$11.6 million per year.

- **Feasibility** – The Recommended Plan (Alternative 1B) is determined to be technically, environmentally, economically, and, likely financially feasible.
- **Environmental Review** – Environmental review is documented in the 2010 Final EIS/EIR and 2017 Draft Supplement to the Final EIS/EIR. The Supplement satisfies NEPA and CEQA by providing a meaningful analysis of all issues relevant to the human environment.
 - The Recommended Plan (Alternative 1B) is identified as having significant and unavoidable impacts on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, which would be permanently converted to nonagricultural use because of project construction activities. No other significant and unavoidable impacts were identified. Some of the adverse effects would be temporary, construction-related effects that would be less than significant or would be reduced to less-than-significant levels through mitigation.
 - Federal, State, and local agencies with permitting or approval authority are expected to use the 2010 Final EIS/EIR and the Supplement to make decisions and/or issue permits for an authorized project. Implementation of an authorized project would include review of prior consultation under the Fish and Wildlife Coordination Act and implementation of any associated recommendations, as appropriate. An addendum to the 2011 Coordination Act Report, which was prepared for Phase I expansion of Los Vaqueros Reservoir, will be prepared and published by USFWS. In addition, permits and consultations may be required with the USACE, the California Department of Fish and Wildlife, NMFS, and USFWS.
- **Applicable Authorities for Federal Participation** – The Water Infrastructure Improvements for the Nation Act (Public Law 114-322) establishes Federal participation in a State-led project providing a benefit in meeting any obligation under Federal law. Public Law 114-322 also limits overall Federal cost-share in a State-led project to no more than 25 percent of total costs. The Central Valley Project Improvement Act (Public Law 102-575) institutes a Federal obligation for refuge water supply and provides for a Federal non-reimbursable share of up to 75 percent for voluntary acquisition of supplement supplies to meet full Level 4 deliveries (in addition to Level 2 delivery requirements). The Reclamation Act of 1939, as amended, provides for upfront, reimbursable, financing of M&I water supply purposes. The Reclamation Act of 1902, as amended, provides for upfront Federal financing of irrigation water supply purpose, with 100 percent repayment of construction costs, without interest. These authorities provided the basis for cost allocation.
- **Initial Allocation of Costs** – An initial allocation of costs was performed for the Recommended Plan (Alternative 1B). About 42 percent of the costs were allocated to Refuge water supply and 57 percent to M&I water supply, with the remaining 3 percent of costs allocated to recreation and irrigation. Appendix G – Cost Allocation documents the cost allocation analysis.

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- **Initial Assignment to Beneficiaries** – Allocated costs are assigned according to the applicable Federal authorities. For the NED Plan (Alternative 4A), the Federal cost share is \$102.7 million, 25 percent of the total construction costs, and the non-Federal share is \$308.2 million. The Federal cost share for the Recommended Plan (Alternative 1B), constrained by the NED Plan, is \$102.7 million, 11 percent of the total construction costs, and the non-Federal share is \$819.6 million. Cost shares for both alternatives are capped by the Public Law 114-322 maximum Federal cost-share of 25 percent. Appendix G – Cost Allocation documents the cost assignment analysis. The non-Federal cost share will be borne by Local Agency Partners and may potentially include state funding through Proposition 1, if CCWD’s application for funding of public benefits is successful. State funds, if provided through Proposition 1 or other sources, would be applied to the non-Federal costs and are unlikely to impact Federal funding levels.
- **Financial Ability to Pay** – Based on costs allocated to various project purposes, an initial assessment of financial repayment capability of project beneficiaries was conducted for the Recommended Plan (Alternative 1B). The analysis of representative M&I beneficiaries’ ability to pay confirmed that M&I beneficiaries would have the ability to pay the allocated costs by setting new water rates. An analysis of a representative agricultural beneficiaries’ ability to pay indicated that agricultural beneficiaries are likely able to pay their relatively small proportion of project costs; further analysis may be conducted when specific agricultural beneficiaries are identified.
- **Federal Interest** – For an action to be executable, there must be Federal interest in the action and it must be technically, environmentally, economically, and financially feasible, as defined by the P&G. The Recommended Plan (Alternative 1B) provides positive NED benefits for M&I, agricultural, and environmental purposes. Reclamation’s interest in the action is based upon the agency’s mission “to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.” Implementing any of the plans would improve water supply reliability and flexibility of the water management system for M&I and environmental uses, and for the CVP overall. The economic benefits of implementing the Recommended Plan (Alternative 1B) exceed the cost when evaluated at the National level. Federal interest is also emphasized through the existing authorities described above, including Public Law 102-575, Section 3406, which establishes Federal obligations in providing water supplies to Central Valley refuges and wildlife habitat areas.
- **Local Actions** – CCWD is seeking State funding for the Recommended Plan (Alternative 1B) through the California Water Commission’s Water Storage Investment Program, which will issue \$2.7 billion in Proposition 1 funds for water storage projects. Preliminary cost allocations and assignment analyses indicate that the Recommended Plan (Alternative 1B) would be eligible for the maximum amount of funding available through Proposition 1. If successful, up to 50 percent of the total construction costs of the Recommended Plan (Alternative 1B) could be funded. The funding application for \$434 million was submitted by CCWD in August 2017 and the Commission plans to make initial funding determinations in mid-2018. This potential funding would contribute towards the non-Federal cost share of public benefits. There is strong local support for Alternative 1B.

- **Consistency with Other Projects and Programs**
 - The Recommended Plan (Alternative 1B) would contribute to CALFED objectives, including water supply reliability and environmental water supply reliability.
 - The Recommended Plan (Alternative 1B) would comply with CVPIA objectives by providing a more reliable, long-term Incremental Level 4 water supply to the Refuges. The CVPIA identifies actions and programs to mitigate for CVP impacts. Under the CVPIA, the Department of Interior is obligated to provide full Level 4 water supplies to the Refuges. The obligation for Incremental Level 4 water supplies is not a Central Valley Project obligation.
 - CCWD is applying for State Proposition 1 funding through the California Water Commission’s Water Storage Investment Program. The Investigation alternatives are consistent with the goals and objectives of the Water Storage Investment Program.
- **Uncertainty in Technical, Economic, Financial, and Environmental Feasibility** – Certain assumptions were made for the Investigation based on engineering, economic, and scientific judgment and the availability of data/information. While this is effective in estimating relative outcomes, various risks and uncertainties could affect implementation of an authorized project.
 - Climate change could produce conditions that differ from today, affecting future CVP and SWP operations. The Investigation’s Final Alternatives were evaluated under 2030 and 2070 climate change condition scenarios. The analysis concluded that these alternatives continue to provide benefits under a range of future climate scenarios. Therefore, the Final Alternatives are robust in that they can continue to provide benefits, even under changed conditions. Appendix F – Climate Change Risk and Uncertainty Analysis documents this climate change analysis.
 - A major unknown aspect of future water system operations is California WaterFix. CCWD’s settlement agreement with the State in regard to California WaterFix reduces some of this uncertainty by providing stipulations that California WaterFix operations cannot have a negative impact on the quantity or quality of CCWD's water. Sensitivity analysis using planned California WaterFix operations, combined with settlement stipulations, showed that the Recommended Plan (Alternative 1B) continued to provide benefits with WaterFix in place. Appendix B – Modeling documents this sensitivity analysis.
 - Reclamation conducted a DEC review in 2007. A second DEC Review is planned in 2018 to verify compliance with the 2007 DEC review recommendations and review additional design components not included in the 2007 review. Results would be included in the Final Feasibility Report.
 - Construction cost estimates, even at a feasibility-level, have inherent risks and uncertainties due to unknown future labor, market, and field conditions, and the

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level and schedule of appropriations. Appropriate contingencies have been applied to account for these uncertainties. Cost estimates included in this Draft Feasibility Report are presented at both appraisal- and feasibility-levels. The appraisal cost estimates for the Neroly Pump Station and modifications to existing Transfer Station will be brought to feasibility level for the Final Feasibility Report.

- Non-contract costs, including mitigation costs, are estimated as 40 percent of the total construction cost. This percentage reflects CCWD’s actual costs encountered during the initial Los Vaqueros Project construction and the Phase 1 Expansion of Los Vaqueros Reservoir.
- Annual OM&R costs include (1) operation, maintenance, and replacement for the new and modified facilities under Phase 2 expansion, and (2) increase in replacement costs for existing facilities due to changed operations under Phase 2 expansion. The estimate of increased replacement costs for existing facilities is underdevelopment and has not been reflected in the annual OM&R costs herein. These estimates are expected to be developed for the Final Feasibility Report. In addition to appropriations for the Federal portion of construction costs, long-term appropriation authorization may be needed to secure funding for the annual operational costs associated with delivering Refuge water supplies.
- The estimation of the economic (monetized) benefits of potential project accomplishments is subject to uncertainties associated with valuation methods and assumptions. To address the risk and uncertainty related to economic valuation of benefits, alternate valuation methods are presented in Appendix D – Economic Analysis for each benefit category as a sensitivity analysis. Overall, the economic risk and uncertainty analyses demonstrate that the estimated economic benefit values and associated assumptions are reasonable and are consistent with values generated through different approaches.
- Much information is known about physical and geological conditions in the vicinity of the proposed project features due to prior design and construction activities associated with the existing Los Vaqueros Project. Additional geotechnical investigation is planned post-authorization to confirm the design and cost estimate assumptions for some of the conveyance features.
- In addition to Federal funding, non-Federal funding for a majority of the construction costs of a recommended plan would need to be identified and secured for the Secretary of the Interior to recommend Congressional appropriations for construction. Alternative financing arrangements are being actively explored by CCWD and the Local Agency Partners, and additional information may be reflected in the Final Feasibility Report.

Recommendations

The overall recommendation of this Feasibility Report is that the Secretary of the Interior, acting through Reclamation, participate in funding and implementing the LPP, Alternative 1B, including the environmental commitments and mitigation measures identified in the planned Final Supplement to the Final EIS/EIR. The Water Infrastructure Improvements to the Nation Act (Public Law 114-322), Section 4007 provides authority for the Secretary of the Interior to (1) participate in State-led storage projects, and (2) provide financial assistance to carry out these projects within any Reclamation State, subject to a set of requirements. This Feasibility Report documents partial confirmation of these requirements, and remaining requirements are expected to be confirmed through action by the State of California and CCWD, as the local sponsor (see also Chapter 6). Pursuant to fulfilling the final requirements of the Water Infrastructure Improvements to the Nation Act, the following is recommended:

- The Secretary of the Interior, acting through Reclamation, shall submit a written notification to Congress of their determination that the State-led project is technically and financially feasible, that the project provides a Federal benefit in accordance with reclamation laws, that sufficient non-Federal funding is available to complete the State-led project, that the State-led storage project sponsors are financially solvent, and that Federal benefits are provided proportionally to the Federal cost-share investment in the State-led project, within 30 days of making such determinations.
- The Secretary of the Interior, acting through Reclamation, shall participate in funding and implementing Alternative 1B, including the environmental commitments and mitigation measures identified in the planned Final Supplement to the Final EIS/EIR. Section 4007 (h) of the Water Infrastructure Improvements to the Nation Act, authorizes \$335 million of funding for qualified State-led storage projects, but specific appropriation is required to designate funding for a project by name, after the Secretary of Interior recommends the project to the appropriate committees of Congress.
 - Total Federal investment may not exceed 25 percent of the total construction cost of \$839 million (October 2015 dollars), consistent with PL 114-322 requirements.
 - Construction cost may be adjusted to allow for escalation from stated price levels (October 2015) to the notice to proceed, based upon Reclamation's Construction Cost Trends publication or similar source.
 - Total construction cost may be increased, but not by more than 15 percent, if needed for modifications that do not materially alter the scope or functions of the project as authorized.
- The Secretary of the Interior, acting in coordination with any non-Federal cost-share partner(s), shall request appropriations annually such that preconstruction activities are completed within 5 years of construction authorization and reservoir area project construction is completed within 10 years of construction authorization.

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- The Secretary of the Interior, in coordination with the managing agencies of the Refuge Water Supply Program, shall request appropriations annually to fund the operational costs associated with delivering water supplies to Refuges.
- The Secretary of the Interior, acting through the USFWS, shall complete Section 7 ESA consultation on the reservoir area construction and operation-related effects of the project, as authorized, within 135 days of receiving the Biological Assessment from Reclamation on reservoir area effects.
- The Secretary of the Interior, acting through Reclamation, shall submit the Biological Assessment on the downstream construction and operation of the project, as authorized, to the USFWS and NMFS within 2 years of construction authorization.
- The Secretaries of the Interior and Commerce, acting through USFWS and NMFS, respectively, shall coordinate and complete Section 7 ESA consultation on the downstream construction and operation of the project, as authorized, within 135 days of receiving the Biological Assessment from Reclamation on the effects of the project.
- The Secretary of the Army, acting through the USACE, shall use the planned Final Supplement to the Final EIS/EIR, USFWS and NMFS BOs on downstream construction and operations, and NHPA Section 106 Memorandum of Agreement or Project Agreement to conduct and complete their permitting process for the construction of project features, as authorized.
- The Secretary of the Interior, acting through Reclamation, shall enter into agreements with CCWD, as the local facility owner and operator, for the following:
 - The long-term use of existing facilities and authorized new facilities associated with the recommended alternative, including operations and maintenance and replacement, as appropriate.
 - Updating existing operations coordination agreements between CCWD and Reclamation, and, as needed, with DWR for diversions, storage, and delivery of Local Agency Partners' SWP water.
 - Utilizing CVP power for delivering project water supplies to Refuges.