RECLAMATION

Managing Water in the West

Draft Feasibility Report
Appendix E - Real Estate

Los Vaqueros Reservoir Expansion Investigation, California

January 2018

Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Contents

Figures

Tables

Abbreviations and Acronyms

APN	Assessor's Parcel Number
Bay Area	San Francisco Bay Area
CALFED	CALFED Bay-Delta Program
CCWD	Contra Costa Water District
CEQA	California Environmental Quality Act
Delta	Sacramento-San Joaquin Delta
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
Investigation	Los Vaqueros Reservoir Expansion Investigation
Local Agency Partners	Prospective Bay Area partner water agencies including CCWD, Alameda County Water District, Santa Clara Valley Water District, Zone 7, East Bay Municipal Utility District, Bay Area Water Supply and Conservation Agency, Byron-Bethany Irrigation District, City of Brentwood, East Contra Costa Irrigation District, San Francisco Public Utilities Commission, and San Luis & Delta-Mendota Water Authority
MLS	Multiple Listing Sales
NEPA	National Environmental Policy Act
Reclamation	U.S. Department of the Interior, Bureau of Reclamation
Refuges	wildlife refuges located south of the Delta that are designated in the CVPIA
ROD	Record of Decision
TAF	thousand-acre-foot

Chapter 1
Introduction

This technical appendix to the Feasibility Report for the Los Vaqueros Reservoir Expansion Investigation (Investigation) documents the development of real estate acquisition and easement costs to support plan formulation and evaluation. Details on the requirements for temporary and permanent easements are included in the Engineering Appendix. The Investigation is a feasibility study evaluating alternatives to develop environmental water supplies, and improve the reliability and quality of San Francisco Bay Area (Bay Area) water supplies, primarily through the expansion of Los Vaqueros Reservoir in Contra Costa County, California.

Background

Los Vaqueros Reservoir is located in the coastal foothills west of the Sacramento-San Joaquin Delta (Delta) in the eastern Bay Area. Contra Costa Water District (CCWD), owner and operator of the reservoir, provides water for 500,000 customers throughout central and eastern Contra Costa County as one of the largest urban water districts in California (CCWD 2017). CCWD completed construction of the original 100-thousand-acre-foot (TAF) Los Vaqueros Project in 1997. CCWD stores water in Los Vaqueros Reservoir that is diverted from the Delta when water quality is favorable, for later release and blending when Delta water quality is degraded. An initial expansion, Phase 1, to 160 TAF was completed in 2012. The primary purposes of both phases of the project are to address seasonal water quality degradation associated with CCWD's Delta water supplies and CCWD's dry year water supply reliability. The 160 TAF reservoir also provides important emergency water supply storage and, as secondary benefits, recreation and flood management.

Expansion of Los Vaqueros was one of five potential surface water storage projects identified by the CALFED Bay-Delta Program (CALFED) as warranting further study. In 2001, the U.S. Department of the Interior, Bureau of Reclamation (Reclamation), California Department of Water Resources (DWR), and CCWD began appraisal-level studies of the potential to expand Los Vaqueros Reservoir to address regional water quality and supply reliability needs. The appraisal-level studies indicated that expanding the reservoir to as much as 500 TAF capacity was technically feasible and could provide water quality and supply reliability to agencies in the region, as well as providing potential benefits to fisheries sensitive to water management operations in the Delta.

Subsequently, Reclamation was directed in Public Law 108-7 (Omnibus Appropriations Act of 2003) to conduct a feasibility-level investigation of the potential expansion of Los Vaqueros Reservoir. In 2004, voters in CCWD's service area were asked to vote on whether CCWD should consider expanding the reservoir. The advisory ballot measure won approval, and as a result, the proposed expansion project was further developed and refined through environmental documentation in accordance with the National Environmental Policy Act (NEPA) and California Environmental Quality Act (CEQA), and extensive public outreach.

After the Draft Environmental Impact Statement (EIS)/Environmental Impact Report (EIR) was published in 2009 by Reclamation and CCWD, a two-step approach was implemented for expanding Los Vaqueros Reservoir. This was done in order for CCWD to move forward with addressing urgent water supply and quality needs, particularly during dry years, while the feasibility-level investigation was still in process. The initial expansion was completed as a local action by CCWD, without financial assistance from the Federal government. Because it was done without State or Federal assistance, this feasibility-level investigation was put on hold until after completion of the initial expansion. To implement the initial expansion, the CCWD Board of Directors certified the EIS/EIR (Reclamation 2010) and approved an expansion from 100 TAF to 160 TAF on March 31, 2010. Reclamation issued a Record of Decision (ROD) in February 2011 to enter into an Integrated Operations Agreement with CCWD based on the 2010 EIS/EIR. Construction on the initial expansion began in early 2011 and was completed in 2012.

Reclamation, DWR, and CCWD continue to investigate the feasibility of larger expansion alternatives, as documented in this appendix, because earlier appraisal-level studies indicated that an additional expansion of Los Vaqueros Reservoir beyond the initial 60 TAF would provide additional regional water supply reliability and statewide environmental benefits. This feasibility-level investigation includes updates to the project plans and studies previously performed to account for significant changes to existing conditions that have occurred since the 2010 EIS/EIR was released, as well as to account for changes that are anticipated to take place within the coming years. These changes include CCWD's initial expansion of Los Vaqueros Reservoir to 160 TAF and the operation of this expanded storage space, other local infrastructure changes (e.g., Contra Costa Canal Replacement Project), likely water management constraints resulting from regulatory actions in the Delta and large programs such as the Bay Delta Conservation Plan, and new project beneficiaries participating in the Investigation.

Study Location

Los Vaqueros Reservoir is located in the Kellogg Creek watershed of Contra Costa County, California in the central and south Delta. The reservoir lies in the foothills west of the Delta in the eastern Bay Area. The study area for the Investigation includes the Los Vaqueros Reservoir watershed and associated facilities, central and south Delta, and service areas of potential local partner water agencies. The central and south Delta is roughly bound by the San Joaquin River on the north and the boundaries of the legal Delta to the south (as established in Section 12220 of the California Water Code). Potential local partner water agencies include CCWD, Alameda County Water District, Santa Clara Valley Water District, the Alameda County Flood Control and Water Conservation District, Zone 7, East Bay Municipal Utility District, Bay Area Water Supply and Conservation Agency, Byron-Bethany Irrigation District, City of Brentwood, East Contra Costa Irrigation District, San Francisco Public Utilities Commission, and San Luis & Delta-Mendota Water Authority. These are collectively referred to as Local Agency Partners herein. Other potential partners include the California Department of Fish and Wildlife and U.S. Fish and Wildlife Service, managing agencies of the south-of-Delta

CVPIA-designated wildlife refuges (Refuges), and the Grassland Water District which represents the landowners of those privately owned/managed wetlands also included in these fourteen total Refuges.

Due to the potential influence on other programs and projects, an extended study area was identified for the Investigation. The extended study area includes south-of-Delta Central Valley wildlife Refuges, operational areas of the CVP and SWP, and the service areas of other Bay Area water agencies that may be indirectly affected by project operations.

Project Objectives

The Investigation focuses on using an expanded Los Vaqueros Project to accomplish the following planning objectives:

Primary Planning Objectives

- Develop water supplies for environmental water management that supports fish protection, habitat management, and other environmental water needs.

- Increase water supply reliability for water providers within the Bay Area to help meet municipal and industrial water demands during drought periods and emergencies or to address shortages due to regulatory and environmental restrictions.

Secondary Planning Objective

- Improve the quality of water deliveries to municipal and industrial customers in the Bay Area, without impairing the project's ability to meet the environmental and water supply reliability objectives stated above.

Final Alternatives Considered in the Feasibility Report

The Final Alternatives being evaluated in the Feasibility Report are summarized in Table 1-1. These alternatives are refined options of the original four alternatives evaluated in the 2010 EIS/EIR and account for changes to existing conditions that have occurred since the 2010 EIS/EIR was released (e.g., expansion of Los Vaqueros Reservoir to 160 TAF, completion of other local projects). They also account for changes that are anticipated to take place within the coming years. These alternatives are operated to provide varying levels of emphasis to the above project objectives.

Alternatives 1A, 1B, and 2A would expand Los Vaqueros Reservoir storage from 160 TAF to 275 TAF, build a new Delta-Transfer Pipeline, and relocate the existing Marina Complex and Los Vaqueros Watershed trails and access roads that would be inundated by the reservoir expansion. None of these would occur under Alternative 4A. All of the action alternatives would upgrade the existing Transfer Facility, build a new Transfer-Bethany Pipeline, replace Pumping Plant #1, and add facilities to deliver water to the Transfer Facility from the Rock Slough Intake, which entails building a new Neroly High-Lift Pump Station.

A list of the major components for all the alternatives is provided in Table 1-1 below. Alternatives 1A, 1B, and 2A differ from one another only in the proposed operations of the facilities. Figure 1-1 shows the facilities associated with Alternatives 1A, 1B, and 2A. Figure 1-2 shows the facilities associated with Alternative 4A.

Table 1-1. Summary of Facilities and Operations for the Final Alternatives

	No Action	**Alternatives 1A, 1B, 2A[1]**	**Alternative 4A**
Existing Facilities (no change)			
Old River Intake	250 cfs	250 cfs	250 cfs
Middle River Intake	250 cfs	250 cfs	250 cfs
Old River Pipeline	320 cfs	320 cfs	320 cfs
Los Vaqueros Pipeline	400 cfs	400 cfs	400 cfs
Transfer-Los Vaqueros Pipeline (Fill/Release)	200/400 cfs	200/400 cfs	200/400 cfs
EBMUD-CCWD Intertie	155 cfs	155 cfs	155 cfs
Transfer Reservoir	4 million gallons	4 million gallons	4 million gallons
Proposed Modifications to Existing Facilities			
Los Vaqueros Reservoir Capacity	160 TAF	275 TAF	160 TAF
Los Vaqueros Reservoir Maximum Water Surface Elevation	507 feet	560 feet	507 feet
Transfer Pump Station Capacity	150 cfs	200 cfs	200 cfs
Proposed New Facilities			
Transfer-Bethany Pipeline Capacity	None	300 cfs	300 cfs
Delta-Transfer Pipeline Capacity	None	180 cfs	None
Expanded Transfer Facility Pump Station Capacity	None	300 cfs	300 cfs
Expanded Transfer Facility Storage Reservoir Capacity	None	5 million gallons	5 million gallons
Neroly High-Lift Pump Station Capacity	None	350 cfs[2]	350 cfs[2]
Pumping Plant #1 Capacity	200 cfs	350 cfs	350 cfs
Los Vaqueros Watershed Facilities			
Los Vaqueros Marina Complex	No change	Relocated upslope	No change
Los Vaqueros Watershed Trails	None	Expanded	None
Los Vaqueros Interpretive Center	No change	Improved	Improved
Los Vaqueros Watershed Office Barn	No change	Seismically upgraded and improved	Seismically upgraded and improved
Associated Local Projects[3]			
EBMUD Mokelumne Aqueduct relining	None	Included	Included
EBMUD Walnut Creek Pumping Plant Variable Frequency Drives	None	Included	Included
EBMUD-CCWD Intertie Pump Station	None	155 cfs	155 cfs
Brentwood Pipeline	None	Included	Included
ECCID Intertie	None	80 cfs	80 cfs

Note:
[1] Alternatives 1A, 1B, and 2A differ from one another only in the proposed operations of the facilities.
[2] Permitted capacity is 350 cfs as defined in the Supplement to the Final EIS/EIR. 300 cfs is the capacity modeled and designed under the Feasibility Study to reflect the current operation requirements.
[3] Local Projects developed separately from the Feasibility Study, but linked to the operations of the project.
Key:
CCWD = Contra Costa Water District
cfs = cubic-feet per second
EBMUD = East Bay Municipal Utility District
ECCID = East Contra Costa Irrigation District
TAF = 1,000 acre-feet

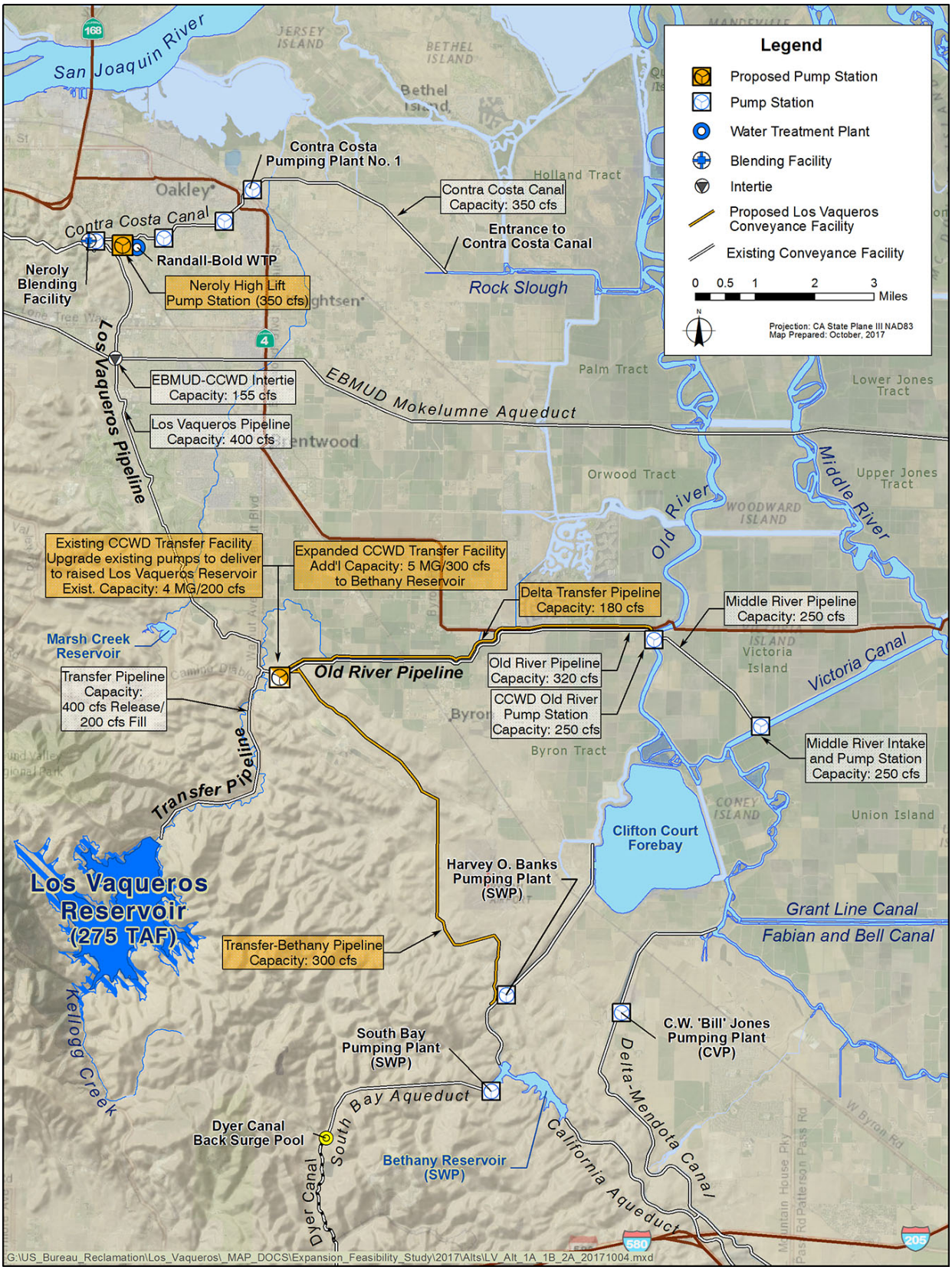

Figure 1-1. Major Components of Alternatives 1A, 1B, and 2A

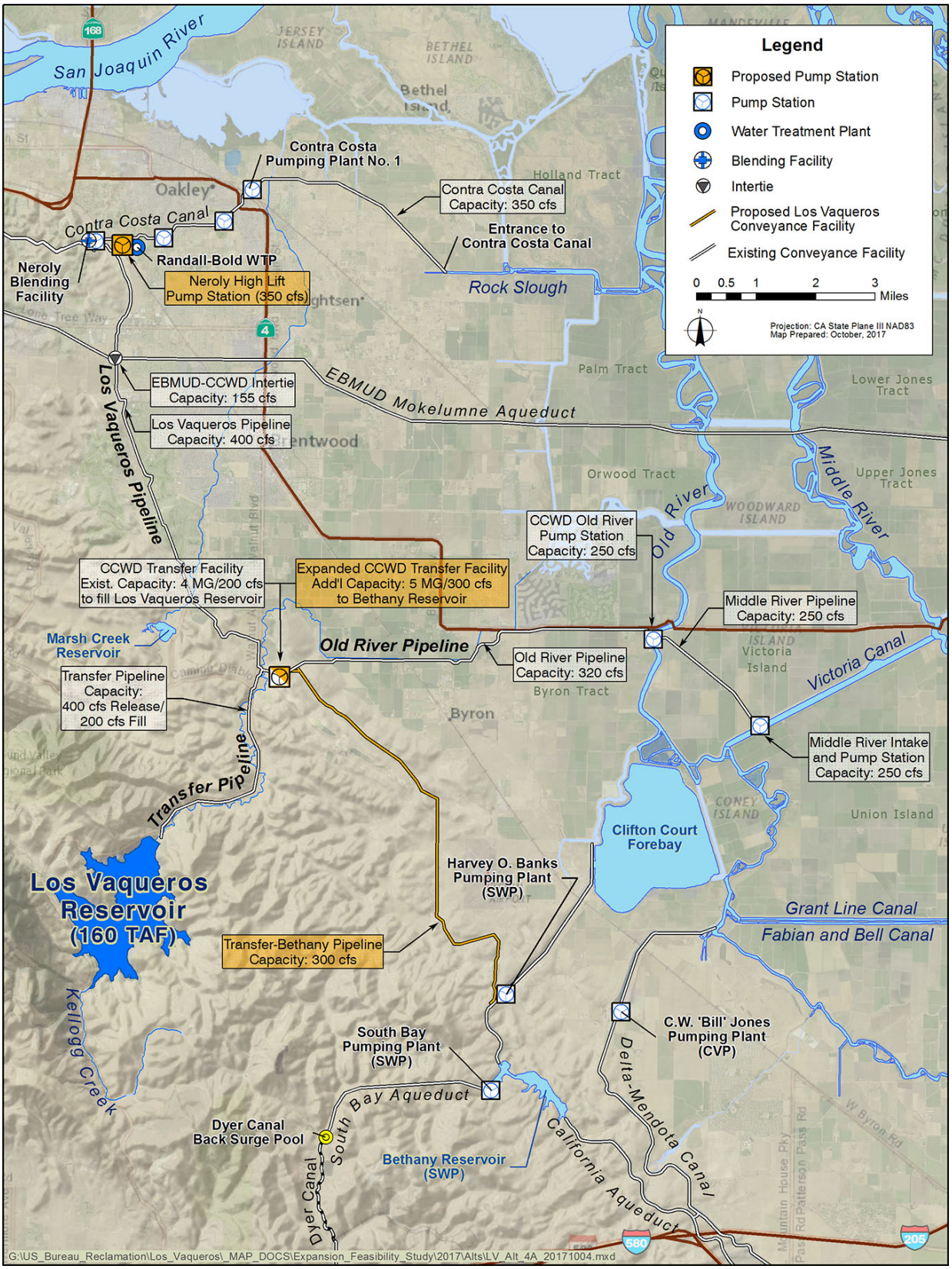

Figure 1-2. Major Components of Alternative 4A

Alternative 1A

Alternative 1A is formulated to maximize deliveries for water supply reliability to the Local Agency Partners, including drought and emergency supply reliability. The operations follow these four priorities:

1) Available water (Delta surplus and Local Agency Partners' water rights and contracts) would first be delivered to meet Local Agency Partner demand, if any.

2) If water and CCWD system capacity were still available, water would then be stored in Los Vaqueros Reservoir for later use by the Local Agency Partners.

3) If additional CCWD system capacity were still available and if CVP north-of-Delta storage conditions allowed withdrawals (high storage conditions only), the next priority would be to wheel CVPIA Level 2 Refuge water through CCWD facilities for delivery to the Refuges. Conducted in coordination with Refuge managers, this operation would release capacity at Jones Pumping Plant that could them be used to move additional water to CVP south-of-Delta contractors. This wheeling operation would not provide additional water supply to the Refuges; rather the released capacity at Jones Pumping Plant could be used to make additional CVP allocations or water transfers.

4) If water and CCWD system capacity were still available after the above three operations, additional deliveries would then be made to help meet Incremental Level 4 Refuge demand.

Alternative 1B

Alternative 1B includes the same facilities as Alternative 1A. Alternative 1B is formulated to maximize potential project deliveries to both Local Agency Partners and Refuges. Alternative 1B balances the priorities of water supply reliability to the Local Agency Partners with environmental water management for the Refuges. The operations follow these four priorities:

1) Available water (Delta surplus and Local Agency Partners' water rights and contracts) would first be delivered to meet Local Agency Partner demand, if any.

2) If water and CCWD system capacity were still available, additional deliveries would then be made to help meet Incremental Level 4 Refuge allocations.

3) If water and CCWD system capacity were still available, water would then be stored in Los Vaqueros Reservoir for later use by the Local Agency Partners or Refuges.

4) If additional CCWD system capacity were still available after the above three operations, the next priority would be to wheel Delta surplus water through CVP facilities to meet Level 2 Refuge demands. Conducted in coordination with the Refuge managers, this operation would release capacity at Jones Pumping Plant to move additional water to CVP south-of-Delta contractors. Wheeling would not provide a new water supply to the Refuges; rather the released capacity at Jones Pumping Plant could be used to make additional CVP allocations or water transfers.

Alternative 2A

Alternative 2A includes the same facilities as Alternatives 1A and 1B. Alternative 2A is formulated to maximize potential project deliveries to the Refuges, prioritizing environmental water management operations. The operations follow these three priorities:

1) Available water (Delta surplus and Local Agency Partners' water rights and contracts) would first be delivered to help meet Incremental Level 4 Refuge allocations.

2) If water and CCWD system capacity were still available, water would then be stored in Los Vaqueros Reservoir for later use by the Refuges.

3) If water and CCWD system capacity were still available after the above two operations, additional deliveries would be made to meet any Local Agency Partner water supply needs.

Alternative 4A

Alternative 4A would not expand the existing 160 TAF Los Vaqueros Reservoir storage capacity or build a new Delta-Transfer Pipeline but would make all of the other major physical improvements identified for Alternatives 1A, 1B, and 2A. Alternative 4A would include an upgrade of the Transfer Facility, a new Transfer-Bethany Pipeline, and facilities to enable filling of Los Vaqueros Reservoir from the Rock Slough Intake. Similar to Final EIS/EIR Alternative 4, Alternative 4A has a Los Vaqueros Reservoir storage capacity of 160 TAF. Alternative 4A uses similar operational priorities as Alternative 1B, with the exception of the wheeling operation, which is not included. Alternative 4A is formulated to maximize potential project deliveries to both the Local Agency Partners and Refuges, but without the benefit of expanded storage in Los Vaqueros Reservoir.

Organization of This Appendix

This appendix is organized as follows:

Chapter 1, Introduction, provides an overview of the Investigation.

Chapter 2, **Property Market Value Analysis,** documents the development of budgetary estimates.

Chapter 3, Land Acquisition Costs, documents the land acquisitions costs for the Investigation.

Chapter 2
Property Market Value Analysis

This chapter describes the market value analysis for properties that would be impacted by proposed Investigation alternatives. Bender Rosenthal, Inc., developed the property market value analysis for the parcels that would be temporarily or permanently impacted. The following sections summarize the methods, assumptions, and results of this analysis.

Cost Methodology

The valuation and acquisition of property is a complex process to insure all of the elements of the State and Federal Uniform Relocation Assistance and Real Property Acquisition Act as amended are considered. This act requires an appraisal be prepared and no less than the appraised fair market value be offered to the owner. While it is a goal to obtain 100 percent willing seller transactions, as a last resort it may be necessary to initiate eminent domain proceedings to obtain possession. The elements of compensation to the owner are the contributory value of the area to be acquired as part of the Larger Parcel (a legal determination). The contributory value of site improvements located in the acquisition area is also valued. Additionally, legal compensation includes the loss in value to the remainder (portion of ownership not need for the project) measured by its loss in market value and/or restoration costs (both are elements of severance damages) to preserve the utility of the remainder or remainders. If the "construction of the project in the manner proposed" should result in a non-speculative measurable market increase in value to the remainder (benefits), this measure of value increase may offset the measure of severance damages. The appraisal process is considered an "opinion" of value prepared by a knowledgeable and professional individual who will view each property and review the degree of title held by the principle owner and others. State statutes and case law established this valuation process. The above describes the formal appraisal process.

This appendix documents the preparation of a budgetary estimate of the potential right of way costs to acquire the property and rights for the proposed Investigation Alternatives. An estimate is a much abbreviated valuation process but considers the elements of compensation set forth in the appraisal process. The preliminary estimate identifies similar types of properties and employs mass valuation techniques to develop the right of way costs.

To prepare this preliminary estimate for the right of way costs, each parcel was classified, based on observed land use, to establish its potential highest and best use. This may reflect current uses and/or future potential development uses. Estimated land values and site improvements for each property will be developed. The values were based on 2014/2015 land listings and sales. Values for the various land uses will be estimated from local real estate sales and listings obtained through the Loopnet, Realtor.Com, and other internet sites. The agricultural values obtained were reviewed with data presented in the 2014/2015 publication "Trends in Agricultural Land and Lease Values." Site improvement and curative costs are obtained from the Marshal Valuation

Service and Assessor's Cost Handbooks [Residential & Agricultural] developed by the California Board of Equalization.

The Assessor's Parcel Number (APN) and necessary property rights (permanent easement and temporary easements) were identified during the facilities design. The information is arrayed on a spreadsheet and includes the APN; the owner; the total parcel size; rights, interests [permanent easement and temporary easement] and project requirements. This allows the estimator to observe the potential impact to the ownerships along the proposed facilities.

This information is the basis of the right of way budget costs. The developed land unit values were applied directly to the areas required for acquisition. Aerial photography aided in validating information regarding the possible impacts on improvements. Damages are based on proposed curative measure for the remainder.

The project requires the purchase of a permanent easement. In the absence of direct easement sales data, the estimator will develop a percentage of the total fee value rights and interests required for the easement and a percentage of the fee value retained by the residual or underlying owner. Subsurface easements for pipelines usually severely restrict the majority of surface activities previously enjoyed by an owner. The acquisition is considered tantamount to full fee or 100 percent of the rights leaving only a reversionary right to the underlying owner should the pipeline be abandoned in the future.

Temporary construction easements values are similar to land rental rates. In the absence of rental data the rate is derived using a rate of return (10 percent) applied to the total fee value of the property to estimate the rental rate for the construction period. For the preliminary estimate a period of one year is reflected in the costs.

No major improvements or structures are impacted by the proposed project. As a result, there are no occupant displacements. Therefore, there are no costs for Relocation Assistance or demolition of major improvements.

Finally, the budget estimate includes escrow costs and reimbursement funds for owners who desire to obtain their own appraisal. Under Senate Bill 1210 which became effective January 1, 2007, an owner is eligible to receive up to $5,000 reimbursement to secure their own appraisal.

The total right of way cost for individual parcels were estimated by totaling the land value, improvement value, severance damages, and title/escrow fees. A contingency is provided for potential administrative settlements, adverse court awards, and minor environmental mitigation costs.

Summary of Property Values

Table 2-1 summarizes of property values by land use category. With the volatility of the real estate market in California, these values should be considered as a gross comparison. As the Investigation moves forward, and recommended alternative is elected, a complete appraisal is recommended to account for individual parcel values and parcel income values.

Table 2-1. Summary of 2015 Parcel Values by Land Use Category

Land Use Category	Range of Parcel Values ($/acre)	
	Low	High
Row Crop		
Large parcels	$9,000	$10,000
Medium parcels	$10,000	$12,500
Small parcels	$12,500	$35,000
Orchard		
	$25,000	$25,000
Residential[1]		
Greater than 5 acres	$30,000	$35,000
Less than 5 acres	$40,000	$40,000
Pasture		
Less than 100 acres	$10,000	$15,000
100 plus acres	$9,000	$9,000

Note:
[1] Residential values only include the value of land and not the improvements as no improvements are estimated to be impacted
Key:
NA = not applicable

Row crop lands included large, medium, and small parcels. Based on large row crop (greater than 100 acres) land sales, parcel values ranged from $9,000 to $10,000 per acre. Medium (55 to 100 acres) row crop values ranged from $10,000 to $12,500 per acre. Small (less than 55 acres) row crop values ranged from $12,500 to $35,000 per acre. The parcels were valued based on their individual size and characteristics.

Only one orchard crop parcel was identified at 49 acres. Based on land sales, large orchard values are about $25,000 per acre depending on size and quality of the trees.

Residential parcels contained large, and small parcels. Based on land sales, large (greater than 5 acres) residential parcel values ranged from $30,000 to $35,000 per acre. Small (less than 5 acres) residential parcel values were about $40,000 per acre.

Pasture parcels contained large acreage parcels. Based on land sales, values for large (greater than 100 acres) pasture sites typically are about $9,000 per acre.

Assumptions and Departures from Standard Appraisal Practices

The market value analysis performed for the Investigation is a budgetary estimate that was prepared in a restricted format, in accordance with and subject to the Uniform Standards of Appraisal Practice adopted by the Appraisal Standards Board of the Appraisal Foundation. A budgetary estimate means this analysis was less than or different from a summary or a self-contained appraisal report. Below are the extent of the appraisal process preformed and the departures taken:

- The properties were viewed by aerial photos.

- No surveys of individual properties were provided. County assessor property information was used for property sizes and improvements. (It was assumed that this information is reasonably correct.)

- Owners/occupants of the properties were not interviewed or contacted.

- Sales and listings histories of the properties were researched using public information and local Multiple Listing Sales (MLS) data.

- Exposure and marketing times were not reported because taking of these properties may constitute an eminent domain procedure.

- A range of values was estimated for the properties because of lack of detailed information other than assessor property information.

- No valuation was provided for CCWD, state, and Federal lands within the study area.

- Personal property (such as manufactured homes and other structures not on permanent foundations) were not included as part of the evaluation.

- This restricted appraisal report is intended for Reclamation to use to develop land and easement costs and determine potential value differences between alternatives within the Investigation study area. The value ranges presented are Bender Rosenthal Inc.'s conclusions, with rational, supporting data, and information as part of the appraiser's work file.

Chapter 3
Land Acquisition Costs

This chapter summarizes the estimated real estate acquisition costs associated with the proposed Investigation alternatives.

Methodology

Acquisition costs are estimated for both the temporarily and permanently impacted parcels that are located in project area. Temporary impacts are those impacts that would occur only during the construction period and were assumed to be on property within the engineering estimate for easements. Permanent impacts are considered for all property within the engineering estimate for easements.

Using 2015 market property values established in Chapter 2, land acquisition costs are estimated for the impacted acreages of each parcel. For temporarily impacted parcels, real estate costs are estimated as a percentage of total acquisition costs for the impacted acreages. In this analysis, a 10 percent factor is used. It should be noted that final costs would be subject to negotiations with land owners.

Real estate costs for temporarily and permanently impacted parcels also include administrative costs. These costs are described in the following section.

Real Estate Acquisition Administration

The administrative cost of one parcel acquisition with no relocation is estimated at $30,000 for the purpose of this analysis. This administrative cost includes the work of surveyors, geographical information system, legal counsel, title company support, appraisers, and a team of realty specialists/land agents. For properties that would be temporarily impacted, the administrative cost for obtaining temporary easement agreements is assumed to be $10,000 per parcel.

The administrative cost of one parcel acquisition with a residential or business relocation is estimated at $70,000. This includes all of the work discussed above for parcel acquisition plus relocation advisory services and relocation benefits. It should be noted that no relocations of private properties have been identified as part of the proposed Investigation alternatives.

Real Estate Acquisition Costs

Facilities associated with the proposed alternatives are organized in four groups to facilitate analysis:

- Group 1: Delta-Transfer Pipeline, and Expanded Transfer Station
- Group 2: Bethany-Transfer Pipeline
- Group 3: In-Watershed Facilities associated with the Los Vaqueros Dam raise

Tables E3-1 and E3-2 summarize the real estate acquisition costs for temporarily and permanently impacted parcels, respectively. Costs in Table 3-1 are 10 percent of the market value of the impacted acreages.

Estimated real estate costs for Investigation alternatives associated with temporarily and permanently impacted parcels are shown in Table 3-3 and 3-4, respectively. Table 3-5 shows the total land acquisitions costs for each alternative, including administrative costs. The total land acquisitions costs are based on the average market value for each impacted property.

Table 3-1. Estimated Real Estate Costs for Temporarily Affected Parcels

	No. of Parcels	**Total Impacted Acres**	**Land Value[1,2]**
Delta-Transfer Pipeline, and Expanded Transfer Station	28	16.63	$27,464
Transfer-Bethany Pipeline – Westerly Alignment [3]	13	13.7	$185,779
Transfer-Bethany Pipeline – Easterly Alignment [4]	16	34.1	$31,899
In-watershed facilities associated with the dam raise	0	0	$-
Total	41	30.33	$213,243

Notes:
[1] Values represent 10 percent of the market value of the impacted acreages.
[2] Values do not include contingency, Improved Value, or Damages
[3] Preferred alignment that ties into the head of the California Aqueduct
[4] Evaluated alignment, but not carried forward. It includes a tunnel segment and lake tab into Bethany Reservoir.

Table 3-2. Estimated Real Estate Acquisition Costs for Permanently Affected Parcels

	No. of Parcels	**Total Impacted Acres**	**Land Value[1,2]**
Delta-Transfer Pipeline, and Expanded Transfer Station	31	35.15	$995,966
Transfer-Bethany Pipeline – Westerly Alignment [3]	14	20.9	$299,379
Transfer-Bethany Pipeline – Easterly Alignment [4]	16	62.2	$623,674
In-watershed facilities associated with the dam raise	0	0	$-
Total	45	56.05	$1,295,345

Notes:
[1] Values do not include contingency
[2] Values Include Improvement Value, Damages, Escrow, and SB1210
[3] Preferred alignment that ties into the head of the California Aqueduct
[4] Evaluated alignment, but not carried forward. It includes a tunnel segment and lake tab into Bethany Reservoir.

Table 3-3. Estimated Land Acquisition Costs for Temporarily Affected Parcels Under Investigation Final Alternatives

Alternative	No. of Parcels	Total Impacted Acres	Land Value	Acquisition Administration
Alternative 1A, 1B, 2A	41	30.33	$213,243	$410,000
Alternative 4A	13	13.7	$185,779	$130,000

Key:
Investigation = Los Vaqueros Reservoir Expansion Investigation

Table 3-4. Estimated Land Acquisition Costs for Permanently Affected Parcels Under Investigation Final Alternatives

	No. of Parcels	Total Impacted Acres	Land Value	Acquisition Administration
Alternative 1A, 1B, 2A	45	56.05	$1,295,345	$1,350,000
Alternative 4A	14	20.9	$299,379	$420,000

Key:
Investigation = Los Vaqueros Reservoir Expansion Investigation

Table 3-5. Estimated Total Land Acquisition Costs for Temporarily and Permanently Affected Parcels Under Investigation Final Alternatives

	Combined Value	20% Contingency	Total Value	Acquisition Administration	Total Land Acquisition Cost [1]
Alternative 1A, 1B, 2A	$1,508,588	$301,718	$1,810,301	$1,760,000	$3,570,301
Alternative 4A	$485,158	$97,032	$582,190	$550,000	$1,132,190

Note:
[1] Total acquisition costs are based on the market value of impacted properties, and include the administrative costs.
Key:
Investigation = Los Vaqueros Reservoir Expansion Investigation

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Chapter 4
References

CCWD. *See* Contra Costa Water District.

Contra Costa Water District. 2017. About Us. Contra Costa Water District. Available at: http://www.ccwater.com/27/About-Us. Accessed August 28, 2017.

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