

CHAPTER 4

Affected Environment, Environmental Consequences, and Mitigation

4.1 Introduction: Approach to the Environmental Analysis

Organized by environmental resource category, this chapter provides an integrated discussion of the affected environment (including regulatory and environmental settings) and environmental consequences (including direct, indirect, and cumulative impacts and mitigation measures) associated with implementation of the Proposed Action and alternatives.

4.1.1 CEQA and NEPA Requirements

The California Environmental Quality Act (CEQA) Guidelines explain that the environmental analysis for an Environmental Impact Report (EIR) must evaluate impacts associated with the project and identify mitigation for any potentially significant impacts. All phases of a proposed project, including construction and operation, are evaluated in the analysis. Section 15126.2 of the State CEQA Guidelines states:

An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis is commenced. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects.

The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, and human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

An EIR must also discuss inconsistencies between the proposed project and applicable general plans and regional plans (State CEQA Guidelines Section 15125[d]).

An EIR must describe any feasible measures that could minimize significant adverse impacts, and the measures are to be fully enforceable through permit conditions, agreements, or other legally binding instruments (State CEQA Guidelines Section 15126.4[a]). Mitigation measures are not required for effects that are found to be less than significant.

The Council on Environmental Quality (CEQ) regulations for implementing the National Environmental Policy Act (NEPA) specify that a federal agency preparing an Environmental Impact Statement (EIS) must consider the effects of the proposed action and alternatives on the environment; these include effects on ecological, aesthetic, historical, and cultural resources and economic, social, and health effects. Environmental effects are categorized as direct, indirect, and cumulative (defined below in Sections 4.1.2 and 4.1.3). An EIS must also discuss possible conflicts with the objectives of federal, state, regional, and local land use plans, policies, or controls for the area concerned; energy requirements and conservation potential; urban quality; the relationship between short-term uses of the environment and long-term productivity; and irreversible or ir retrievable commitments of resources. An EIS must identify relevant, reasonable mitigation measures not already included in the proposed action or alternatives that could avoid, minimize, rectify, reduce, eliminate or compensate for the project's adverse environmental effects (40 Code of Federal Regulations [CFR] 1502.14, 1502.16, 1508.8).

4.1.2 Section Contents and Definition of Terms

Chapter Organization

The environmental setting, impacts, and mitigation measures have been prepared using NEPA terminology (affected environment, environmental consequences, and mitigation measures).

Chapter 4 is organized into the following environmental resource or issue areas:

- Section 4.2, Delta Hydrology and Water Quality
- Section 4.3, Delta Fisheries and Aquatic Resources
- Section 4.4, Geology, Soils, and Seismicity
- Section 4.5, Local Hydrology, Drainage, and Groundwater
- Section 4.6, Biological Resources
- Section 4.7, Land Use
- Section 4.8, Agriculture
- Section 4.9, Transportation and Circulation
- Section 4.10, Air Quality
- Section 4.11, Noise
- Section 4.12, Utilities and Public Service Systems
- Section 4.13, Hazardous Materials / Public Health
- Section 4.14, Visual/Aesthetic Resources
- Section 4.15, Recreation
- Section 4.16, Cultural and Paleontological Resources
- Section 4.17, Socioeconomic Effects
- Section 4.18, Environmental Justice
- Section 4.19, Indian Trust Assets
- Section 4.20, Growth-Inducing Effects

Section Contents

Sections 4.2 through 4.19 follow the same general format:

“**Affected Environment**” consists of two subsections: Regulatory Setting and Environmental Setting, which include the following information:

- **Regulatory Setting** identifies the plans, policies, laws, and regulations that are relevant to each topical section and describes permits and other approvals necessary to implement the project. Most of the proposed facilities are located in Contra Costa County; however Alternatives 1 and 2 involve a South Bay Connection to the South Bay Aqueduct pumping plant at Bethany Reservoir located in Alameda County. Therefore, this subsection summarizes or lists the potentially relevant policies and objectives of both the Contra Costa County General Plan and the Alameda County General Plan.
- **Environmental Setting** provides an overview of the physical environmental conditions in the area at the time or prior to the publication of the Notice of Preparation that could be affected by implementation of the Proposed Action or alternatives (i.e., the “affected environment”) in accordance with State CEQA Guidelines Section 15125 and NEPA regulations (40 CFR 1502.15).

“**Environmental Consequences and Mitigation Measures**” identifies the impacts of the project on the environment in accordance with State CEQA Guidelines Sections 15126, 15126.2, and 15143 and NEPA regulations (40 CFR 1502.16). The following discussions are included in this subsection:

- **Methods and Assumptions** describes the methods, process, procedures, and/or assumptions used to formulate and conduct the impact analysis.
- **Significance Criteria** provides the criteria used in this document to define the level at which an impact would be considered significant in accordance with CEQA. Significance criteria (sometimes called “thresholds of significance”) used in this EIS/EIR are based on the checklist presented in Appendix G of the State CEQA Guidelines; factual or scientific information and data; and regulatory standards of federal, state, and local agencies.

While CEQA requires a determination of impact significance for each impact discussed in an EIR based on the significance criteria, NEPA does not require this for an EIS. Under NEPA preparation of an EIS is triggered if a federal action has the potential to “significantly affect the quality of the human environment,” which is based on the context and intensity for each potential impact. The significance thresholds used in this EIS/EIR also encompass the factors taken into account under NEPA to evaluate the context and the intensity of the effects of an action.

- **Impact Identification.** Project impacts are organized into two categories: **Direct and Indirect Impacts** and **Cumulative Impacts**. Direct impacts are those that are caused by the action and occur at the same time and place. Indirect effects are reasonably foreseeable consequences to the physical environment that may occur at a later time or at a distance from the project area, such as growth-inducing and other effects related to changes in land use patterns, population density, or growth rate. A cumulative impact is an impact that would result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions.

The impacts are listed numerically and sequentially throughout each section. An impact statement precedes the discussion of each impact and provides a summary of the impact topic. The discussion that follows the impact statement includes an analysis that describes the nature, context, and intensity of the impact and is the basis for determining the level of impact. As noted above, impact conclusions are made using impact significance criteria and include consideration of the “context” of the action and the “intensity” (severity) of its effects in accordance with NEPA guidance (40 CFR 1508.27). Each impact is categorized as one of the following:

- **Beneficial Impact:** A beneficial impact would improve the existing conditions. These impacts are coded as B in impact summary tables located throughout this document.
- **Less-than-Significant Impact:** A less-than-significant impact would cause no substantial adverse change in the environment as measured by the applicable significance criterion; therefore, no mitigation would be required. These impacts are coded as LS in impact summary tables located throughout this document.
- **Significant Impact:** A significant impact would cause a substantial adverse change in the physical conditions of the environment. Impacts determined to be significant adverse effects based on the significance criteria fall into two categories: those for which there is feasible mitigation available that would reduce the environmental effects to less than significant levels and those for which there is either no feasible mitigation available or for which, even with implementation of feasible mitigation measures, there would remain a significant adverse effect on the environment.

Less Than Significant Impact with Mitigation. Significant impacts for which there is feasible mitigation to reduce effects to a less than significant level are coded as LSM to denote that they are less-than-significant with mitigation in impact summary tables located throughout this document.

Significant, Unavoidable Impact. A significant, unavoidable impact is a substantial adverse change in the environment that cannot be avoided or mitigated to a less-than-significant level if the project is implemented. These impacts are coded as SU in impact summary tables located throughout this document.

- **Mitigation Measures** are presented where feasible to avoid, minimize, rectify, reduce, or compensate for significant, adverse impacts of the project in accordance with the State CEQA Guidelines (Section 15126.4) and NEPA regulations (40 CFR 1508.20). Mitigation measures can include the following strategies:
 - **Avoiding** the impact altogether by not taking an action or parts of an action,
 - **Minimizing** impacts by limiting the degree or magnitude of an action,
 - **Rectifying** the impact by repairing, rehabilitating, or restoring the impacted environment,
 - **Reducing** or eliminating the impact over time through preservation and maintenance operations during the life of the action, or

- **Compensating** for the impact by replacing, preserving, or providing substitute resources or environments.

Each mitigation measure is identified numerically to correspond with the number of the impact it addresses. No mitigation measures are proposed when the impact is determined to be “less than significant.” Where sufficient feasible mitigation is not available to reduce impacts to a “less-than-significant” level, the impacts are identified as remaining “significant and unavoidable.”

Impact Assessment

Impacts are assessed by comparing project effects to existing environmental conditions and future conditions without the project. For landside resource issues associated with construction and operation of the project alternatives, it is assumed that future conditions without the project would be the same as existing conditions. See Chapter 3.0 for further description of the No Project/No Action Alternative. While some small projects and changes in land use in the project area can be anticipated over time, there are no major development or facilities projects proposed in the area of the proposed project facilities that warrant describing a future-without-project scenario that is different from existing conditions relating to landside resources. Thus, for purposes of this impact analysis for landside issues, the future-without-project conditions are the same as existing conditions.

For water-related issues (i.e., Delta water resources, water quality, fisheries and aquatic resources), future-without-project conditions are not expected to be the same as existing conditions. Conditions in 2030 are expected to include increased water demand and select future projects that could affect Delta water supply and/or water quality. In addition, existing and “Future Without Project” conditions could differ in several respects with regard to water export operations.

For purposes of this impact analysis, existing conditions are defined as the 2005 level of demand for water supply from the Delta along with the 2005 Delta water system infrastructure. Future-Without Project conditions are defined as the projected 2030 levels of demand and the projects and actions shown in the following list that represent reasonably foreseeable future actions. The Future Without Project conditions are based primarily on the “common assumptions” developed in a coordinated effort by Reclamation and the California Department of Water Resources (DWR). Assumptions about these future projects and actions have been incorporated into the Common Assumptions Common Model Package, which includes the water resources and water quality modeling tools used in this impact analysis (see Section 4.2, Delta Hydrology and Water Quality and Appendix C for details on model assumptions and analysis).

What follows is a list of reasonably foreseeable future projects and actions affecting Future Without Project conditions:

- 2030 Level of Development – Projection of 2030 demands for Delta water supply and 2030 land use changes
- South Delta Improvement Project, Phase I – Installation of permanent operable barriers in the south Delta (Phase II is not included in this analysis)

- South Bay Aqueduct Enlargement – Enlargement of conveyance capacity for the South Bay Aqueduct from 300 cubic feet per second (cfs) to 430 cfs (now under construction).
- Contra Costa Water District (CCWD) Canal Replacement Project – Replacement of the unlined portion of the Contra Costa Canal with a pipeline
- Delta-Mendota Canal-California Aqueduct Intertie – Increase of Delta water supply conveyance capacity from 4,200 cfs to 4,600 cfs
- Freeport Regional Water Project – Implementation of water supply project by the Freeport Regional Water Authority, comprising East Bay Municipal Utility District (EBMUD) and Sacramento County
- CCWD-EBMUD Intertie – Diversion of up to 3.2 thousand acre-feet (TAF) per year of CCWD/Central Valley Project (CVP) water via the Freeport Regional Water Project with delivery to CCWD via the CCWD-EBMUD Intertie
- Level 2 Federal Refuge Water Supply – Assumption of firm Level 2 refuge water supply needs within the Sacramento and San Joaquin valleys
- Sacramento Area Water Forum American River Water Rights – Assumptions regarding exercise of existing American River water rights as described in the Common Assumptions documentation
- Placer County Water Agency Pump Station Expansion Project – Expansion of Placer County Water Agency’s pump station on the American River to divert up to 35 TAF/year of CVP supply
- Phase 8 Settlement Agreement – A Sacramento Valley groundwater substitution program that supplies up to 185 TAF/year to the State Water Project (SWP) and CVP
- Dedicated CVP Conveyance at SWP Banks Pumping Plant – SWP conveyance of 50 TAF/year of Level 2 refuge water for the CVP in July and August of each year
- North-of-Delta Accounting Adjustments – Through adjustments to the 1986 Coordinate Operations Agreement, release by the CVP of up to 37.5 TAF/year from Shasta Reservoir for the SWP to meet in-basin requirements

The Bay Delta Conservation Plan, now in development, is not included as part of Future-Without Project conditions. At present, this planning effort has identified a broad range of potential options to modify water conveyance through and/or around the Delta. Environmental review for the Bay Delta Conservation Plan is just beginning and will be part of the process to identify a preferred plan. Implementation of any of the options under consideration could substantially alter conditions in the Delta. However, there is insufficient information about any of the alternative options to include this conservation plan at this time as part of the No Action/No Project Alternative or the Future Without Project conditions.

4.1.3 Cumulative Impact Analysis

Definition of Cumulative Impacts

Cumulative impacts are defined in the State CEQA Guidelines (Section 15355) as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” A cumulative impact is “the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor, but collectively significant, projects taking place over a period of time.” In a manner consistent with state CEQA Guidelines Section 15130[a], the discussion of cumulative impacts in this EIS/EIR focuses on potentially significant cumulative impacts.

The NEPA regulations define a cumulative impact as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects can result from individually minor, but collectively significant, actions over time and differ from indirect impacts (40 CFR 1508.8). They are caused by the incremental increase in total environmental effects, when the evaluated project is added to other past, present, and reasonably foreseeable future actions.

Methodology

The evaluation of potential cumulative effects in this EIS/EIR is subdivided into landside resources and waterside resources in order to address these two generally distinct categories of effects associated with the project alternatives. Siting, construction and operation of each of the new and expanded facilities under the project alternatives would affect land based resources and issue areas including: geology, soils, and seismicity; local hydrology, drainage and groundwater; biological resources; land use; agriculture; transportation and circulation; air quality; noise and vibration; utilities and public services; visual/aesthetic resources; recreation; cultural and paleontological resources; socioeconomic effects; environmental justice; and Indian Trust Assets. Operation of the overall expanded Los Vaqueros Reservoir system to divert water from the Delta for storage and delivery in a manner and on a schedule that achieves the project objectives would affect water-based resources and issue areas (labeled here “waterside”) including: Delta hydrology and water quality, and Delta fisheries and aquatic resources. The projects and plans that might contribute to cumulative effects on landside resources are different from those potentially affecting waterside resources.

To identify activities to be analyzed in the evaluation of cumulative impacts, Section 15130(b) of the state CEQA Guidelines recommends:

- The “list approach,” which entails listing past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the agency; or

- The “projection approach,” which uses a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document that has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact.

For most resource areas, both landside and waterside, the list approach is used. For landside resource issues in this case, a list of potentially relevant projects was compiled based on a review of local and regional development, infrastructure, and transportation projects. For the waterside resource issues, the compiled list comprises major regional water resource projects as well as assumptions regarding operation of the state and federal Delta water systems. The lists of relevant projects considered in the cumulative effects analysis for landside and waterside issue areas are provided below. The geographic scope of the cumulative impact evaluation varies depending on the resource area being analyzed. **Table 4.1-1** indicates the general geographic scope considered for each resource area. The “Cumulative Impacts” subsection for each resource topic begins with a summary of the approach and the geographic area relevant to that topic.

Landside Resources

As indicated in Table 4.1-1, the appropriate geographic scope for cumulative effects analysis associated with the landside resource areas ranges from site-specific to regional, encompassing primarily eastern Contra Costa County, but also potentially including eastern Alameda County and western San Joaquin County. In addition, since many of the project effects on landside resources result from construction activities and would be short-term, lasting only until construction is completed (e.g., construction traffic, noise, or site erosion), projects proposed for construction in the same timeframe as the Los Vaqueros Reservoir Expansion Project (approximately 2012 to 2015) are particularly relevant for evaluation of potential cumulative effects.

A list of possible projects for consideration in evaluation of potential cumulative effects on landside resources was compiled based on review of publically available information as well as contacts with local and regional planning, public works departments, and special districts or agencies (e.g., parks) (see **Appendix I**).

The following regional and local plans were also reviewed as part of this process:

- Contra Costa County General Plan
- East Contra Costa County Habitat Conservation Plan and Natural Community Conservation Plan
- City of Brentwood General Plan
- Alameda County East County Area Plan - A Portion of the Alameda County General Plan
- San Joaquin County General Plan
- Mountain House Master Plan
- San Joaquin Council of Governments 2007 Regional Transportation Plan
- Metropolitan Transportation Commission Transportation 2030 Plan
- Bay Area Air Quality Management District Year 2000 Plan

**TABLE 4.1-1
GEOGRAPHIC SCOPE FOR EACH RESOURCE AREA CONSIDERED
FOR CUMULATIVE EFFECTS ANALYSIS**

Resource Area	Section	Geographic Scope
Waterside		
Delta Hydrology and Water Quality	4.2	Sacramento-San Joaquin Delta system as reflected in the CalSim model. Also local Delta channels at and near the existing CCWD intake facilities including Old River and Victoria Canal, and the proposed new intake facility on Old River.
Delta Fisheries and Aquatic Resources	4.3	Sacramento-San Joaquin Delta system as reflected in the CalSim model. Also local Delta channels at and near the existing CCWD intake facilities including Old River and Victoria Canal, and the proposed new intake facility on Old River.
Landside		
Geology, Soils and Seismicity	4.4	Site-specific. Individual construction sites or other ground disturbance area associated with the project.
Local Hydrology, Drainage and Groundwater	4.5	Local. Local drainage system and individual construction / grading sites. Local groundwater resources at individual construction sites.
Terrestrial Biology	4.6	Regional. Los Vaqueros Watershed, eastern Contra Costa and Alameda counties and western San Joaquin County
Land Use	4.7	Local. Individual facility sites and immediate vicinity.
Agriculture	4.8	Local and Regional. Individual facility sites and immediate vicinity as well as eastern Contra Costa County.
Transportation and Circulation	4.9	Local and Regional. Roadway network within and to eastern Contra Costa County (includes local roadways in eastern Contra Costa County and major freeways / roadways in Contra Costa, Alameda, and San Joaquin counties).
Air Quality	4.10	Regional. Bay Area Air Basin. Global for greenhouse gas emissions.
Noise and Vibration	4.11	Local. Immediate vicinity of individual facility sites (i.e., typically within half a mile or less, depending on the nature of the project noise source).
Utilities and Public Services	4.12	Local. Local utility and public services service areas.
Hazardous Materials / Public Health	4.13	Local. Individual facility sites and immediate vicinity for hazardous materials and EMF.
Visual/Aesthetic Resources	4.14	Local. Individual facility sites and local viewshed.
Recreation	4.15	Local and Regional. Local recreation facilities / areas near facility sites. Regional recreation areas that provide recreational uses similar to the existing Los Vaqueros Reservoir.
Cultural Resources	4.16	Local. Individual construction sites or other ground disturbance areas and immediate vicinity. Potential regional implications, depending on nature of resources affected.
Paleontological Resources	4.16	Site-specific. Individual construction sites or other ground disturbance area associated with the project.
Socioeconomics	4.17	Regional. Contra Costa County.
Environmental Justice	4.18	Local and Regional. Communities near project facilities in eastern Contra Costa County.
Indian Trust Assets	4.19	Local. Sites near proposed project facilities.

The list of planned and possible projects was screened to determine which projects had the potential to contribute to cumulative effects in combination with the Los Vaqueros Reservoir Expansion project. If a future project was not reasonably probable, it was not included in the analysis. Further, a project was eliminated from further consideration of cumulative effects for one or more of the following reasons:

- It would not be constructed in a location where its effects would combine with the effects of the proposed Los Vaqueros Reservoir Expansion project;
- It would not be constructed at the same time as the proposed project;
- It would not generate the same type of impacts as those resulting from the proposed Los Vaqueros Reservoir Expansion
- A project or activity would be too small to make a considerable contribution to cumulative effects in combination with the proposed project.

See Appendix I for a review of the reasons projects were retained or eliminated from further consideration in the cumulative effects analysis.

Table 4.1-2 describes the projects retained for consideration in the assessment of potential cumulative effects on landside resources. It indicates whether the project might contribute to cumulative construction effects; siting or footprint effects, such as habitat or farmland loss; and/or operational effects in combination with one or more of the project alternatives. As appropriate and indicated in each environmental resource section, the projects listed in this table are considered in the analysis of cumulative effects for landside resources.

Waterside Resources

For the water-related issues addressed in Sections 4.2 and 4.3, the analysis of cumulative impacts was based partly on an estimation of anticipated future cumulative conditions established through a system-wide hydrologic and operations modeling process. Projects and conditions or activities considered in the assessment of cumulative effects on the Delta water resources and aquatic and fishery resources are listed above in Section 4.1.2 and further described in Section 4.2, Delta Hydrology and Water Quality. These and other water resource modeling assumptions are described in detail in Appendix C, Delta Water Resources - Modeling Analysis (see Chapter C-2). As described above, these assumptions about future conditions build on the set of “common assumptions” developed by CCWD, Reclamation, and DWR.

In addition to the assumptions about future projects and actions incorporated into the modeling tools, the Stockton Delta Water Supply Project is also discussed in the cumulative effects analysis. This project has not yet been fully permitted and, therefore, was not incorporated into the modeling tool; however, it is evaluated along with the Los Vaqueros Reservoir Expansion Project for potential cumulative effects on Delta water resources. The Bay Delta Conservation Plan, now in development, is not included in the cumulative effects analysis. There is insufficient information about any of the broad range of alternative options at this time to include it in the cumulative effects analysis.

**TABLE 4.1-2
PROJECTS CONSIDERED IN THE ANALYSIS OF CUMULATIVE EFFECTS ON LAND-SIDE RESOURCES**

Project	Relationship to Proposed Project	Area of Potential Cumulative Effect
City of Brentwood. A total of 4,844 residential units and 1,373,275 square feet of commercial development are currently planned for construction by 2018. Of this total, 484 units are under construction, 3889 units are approved, but no permit has been issued and 471 units are proposed but are not yet approved. Some units are under construction with project approval up until 2018.	4.5 miles north of the Delta-Transfer Pipeline	<p>Construction: Possible construction period overlap. Consider for potential cumulative construction effects related to traffic and air quality.</p> <p>Siting: Consider potential cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: No. Buried Delta-Transfer Pipeline, the project facility nearest to this development (Alternatives 1, 2, and 3) would not generate operational effects (e.g., noise). This development is too far from proposed Old River Intake and Pump Station Expansion (Alternative 3 only) for cumulative operational noise effects.</p>
Cecchini Ranch, Discovery Bay. A 1,110 acre mixed used development with up to 4,000 residences, new marina, commercial and light industrial uses, new parks, schools, open space and delta interpretive center. Development plan and General Plan Amendment proposal in progress with CEQA process to follow. Possible construction start time frame between 2014 and 2018.	Just north of project area, north of SR 4, Old River Pump Station and Delta-Transfer Pipeline alignment along SR 4.	<p>Construction: Possible construction period overlap. Consider for potential cumulative construction effects related to noise, traffic and air quality.</p> <p>Siting: Consider potential cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: No. Buried Delta-Transfer Pipeline, the project facility nearest to this development (Alternatives 1, 2, and 3) would not generate operational effects (e.g., noise). This development is too far from proposed Old River Intake and Pump Station Expansion (Alternative 3 only) for cumulative operational noise effects.</p>
Bixler Road Business Park, Discovery Bay. Change in land use designation from Office (OF) to Business Park (BP) to establish a 62,500 sq. ft. business park. Applications submitted 12/11/2006 and are under review. Applicant is trying to address issue with driveway entrance encroaching onto irrigation canal.	0.5 miles north of the Delta-Transfer Pipeline	<p>Construction: Possible construction period overlap. Consider for potential cumulative construction effects related to traffic and air quality.</p> <p>Siting: Consider potential cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: No. Buried Delta-Transfer Pipeline, the project facility nearest to this development (Alternatives 1, 2, and 3) would not generate operational effects (e.g., noise). This development is too far from proposed Old River Intake and Pump Station Expansion (Alternative 3 only) for cumulative operational noise effects.</p>
Pantages Bay at Discovery Bay. Change in the land use designation from Agricultural Lands (AL) to Single Family Residential-High Density (SH) to allow for an approximately 290 unit water-oriented residential project. Approximately 172 acres in size. EIR to be released soon and ground work is estimated to begin in 2010.	2 miles north of Old River Intake	<p>Construction: Possible construction period overlap. Consider for potential cumulative construction effects related to traffic and air quality.</p> <p>Siting: Consider potential cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: No. Buried Delta-Transfer Pipeline, the project facility nearest to this development (Alternatives 1, 2, and 3) would not generate operational effects (e.g., noise). This development is too far from proposed Old River Intake and Pump Station Expansion (Alternative 3 only) for cumulative operational noise effects.</p>
Bixler Road Commercial Project, Discovery Bay. GPA study to re-designate 46 acre parcel from Agricultural Lands (AL) to a mix of commercial, office, and light industrial uses. GPA study authorized, but no applications submitted to date.	1 mile north of Delta-Transfer Pipeline	<p>Construction: Possible construction period overlap. Consider for potential cumulative construction effects related to traffic and air quality.</p> <p>Siting: Consider potential cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: No. Buried Delta-Transfer Pipeline, the project facility nearest to this development (Alternatives 1, 2, and 3) would not generate operational effects (e.g., noise). This development is too far from proposed Old River Intake and Pump Station Expansion (Alternative 3 only) for cumulative operational noise effects.</p>

TABLE 4.1-2 (Continued)
PROJECTS CONSIDERED IN THE ANALYSIS OF CUMULATIVE EFFECTS ON LAND-SIDE RESOURCES

Project	Relationship to Proposed Project	Area of Potential Cumulative Effect
Bixler Road Residential Project, Discovery Bay. GPA study to re-designate Agricultural Lands (AL) to combination of Single Family Residential – High Density (SH), Open Space (OS), and Parks and Recreation (PR) in order to subdivide and develop 20-acre site into 68 single family lots. GPA authorized, but no applications submitted to date.	1.5 miles north of Delta-Transfer Pipeline	<p>Construction: Possible construction period overlap. Consider for potential cumulative construction effects related to noise, traffic and air quality.</p> <p>Siting: Consider potential cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: No. Buried Delta-Transfer Pipeline, the project facility nearest to this development (Alternatives 1, 2, and 3) would not generate operational effects (e.g., noise). This development is too far from proposed Old River Intake and Pump Station Expansion (Alternative 3 only) for cumulative operational noise effects.</p>
Discovery Bay / Byron Wastewater Treatment Plant Upgrade	Just north of project area, north of SR 4, Old River Pump Station and north of Delta-Transfer Pipeline alignment along SR 4	<p>Construction: No. Improvements to be completed by mid-2009</p> <p>Siting: Consider potential for cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: No</p>
CCWD Alternative Intake Project (AIP). New Delta water intake on Victoria Island. CCWD will use, not to increase total water diversion, but to maximize water quality of the water it diverts from the Delta. Construction in progress; to be completed in 2009.	Victoria Island, across Old River from Old River Pump Station and proposed Delta Intake and Pump Station	<p>Construction: No construction period overlap with proposed project; therefore no cumulative construction effects.</p> <p>Siting: Consider potential for cumulative effects related to loss of farmland and Delta channel shoreline/riparian habitat.</p> <p>Operations: No. Too far from proposed project facilities to result in cumulative noise effects.</p>
Brentwood Solid Waste Transfer Facility Expansion	North of project area and north of Expanded Transfer Facility site	<p>Construction: Possible construction period overlap. Consider potential for cumulative construction effects related to noise, traffic and air quality.</p> <p>Siting: Consider potential for cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: Consider potential cumulative effects related to increased operational traffic.</p>
Byron Bethany Irrigation District Corporate Offices	Just east of Transfer-Bethany Pipeline alignment	<p>Construction: Expected to be completed by 2010.</p> <p>Siting: Consider potential for cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: No. Proposed project would not result in operational impacts, such as noise or increased traffic in the vicinity of the BBID office project.</p>
Green Waste Recycling Facility – Byron	East of Transfer-Bethany Pipeline alignment	<p>Construction: No construction period overlap with proposed project; therefore no cumulative construction effects.</p> <p>Siting: No. footprint impacts, if any, too minor to make cumulatively considerable contribution to loss of habitat and/or important farmland.</p> <p>Operations: Consider potential for cumulative effects related to increased operational traffic.</p>

TABLE 4.1-2 (Continued)
PROJECTS CONSIDERED IN THE ANALYSIS OF CUMULATIVE EFFECTS ON LAND-SIDE RESOURCES

Project	Relationship to Proposed Project	Area of Potential Cumulative Effect
Zone 7 Altamont Water Treatment Plant and Pipeline – northeastern Alameda County (Dyer Road). 42 mgd WTP, raw water conveyance, intake and pump.	West of Bethany Reservoir, the southern terminous of the proposed Transfer-Bethany Pipeline	<p>Construction: No construction period overlap with proposed project; therefore no cumulative construction effects.</p> <p>Siting: Consider potential for cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: NA</p>
DWR South Bay Aqueduct Enlargement Project – Northeastern Alameda County. Capacity enlargement of SBA canal system that extends from Bethany Reservoir west and south to Bay Area customers. Construction to be completed in 2009	Extends west from Bethany Reservoir, which is the southern terminous of the proposed Transfer-Bethany Pipeline	<p>Construction: No construction period overlap with proposed project; therefore no cumulative construction effects.</p> <p>Siting: Consider potential for cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: Operation of the expanded capacity is included in the impact modeling for “future without project” conditions.</p>
Mountain House Community – northwestern San Joaquin County. Future phases of multi-year build out of new community on 4,784 acres including 2,500 acres for residential, 700 acres commercial, and 750 acres open space and parks. Total ultimate population projected to be 43,500. First phase – 14 neighborhoods have been completed.	Just east of Bethany Reservoir, the southern terminous of the proposed Transfer-Bethany Pipeline	<p>Construction: No. Area access by different regional roads and too far away to generate cumulative construction effects in combination with the project.</p> <p>Siting: Consider potential for cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: No.</p>
Road Safety Improvement and Widening Projects: SR 4, Vasco Road, Walnut Boulevard Widening, Byron Highway, – Southeastern Contra Costa and northeastern Alameda Counties. Phased improvements for safety and traffic congestion reduction that include widening, land reconfiguration, restriping, and addition of safety railing / barriers and signage.	Key regional traffic access route to and through project area.	<p>Construction: Most improvements scheduled for completion prior to LV project construction but some construction schedule overlap is possible. Consider potential for cumulative traffic, noise, and air quality effects.</p> <p>Siting: Consider potential for cumulative effects related to loss of habitat and/or important farmland.</p> <p>Operations: No. No relevant operational effects from road improvement projects.</p>

AIP = Alternative Intake Project
BBID = Byron-Bethany Irrigation District
CCWD = Contra Costa Water District
CEQA = California Environmental Quality Act
LV = Los Vaqueros
mgd = million gallons per day
SBA = South Bay Aqueduct
SR = State Route
WTP = water treatment plant

4.1.4 Resources Eliminated from Detailed Analysis

The State CEQA Guidelines provide for identifying and eliminating from detailed study issues that are not significant or that have been covered by prior environmental review (Pub. Res. Code 21002.1). The NEPA regulations provide similar provisions (40 CFR 1501.7 [a][3]). During initial scoping with the public and governmental agencies, and based on information obtained through literature review, agency correspondence, consultations, and field data collection, it was determined that mineral resources would not experience any potential environmental impacts resulting from the proposed project or any of the alternatives. Accordingly, mineral resources are not addressed further in this EIS/EIR but are identified below with a brief discussion of why impacts to each resource are not anticipated.

Mineral Resources

The project alternatives would not affect any known sand, gravel, natural gas, gold, or silver areas or result in the loss of availability of any known mineral resource. Potential project facilities associated with the proposed project or any alternative do not fall within any areas identified by the Contra Costa County General Plan (2005) as mineral resource areas. Siting and construction of project facilities would not cover, conceal, or otherwise make inaccessible such resources.

The project would make use of sand and gravel resources as construction materials. As described in Section 3.5 of the project description, much of the clay and coarser shell materials required for dam construction would be taken from borrow sites within the Los Vaqueros Reservoir, as they were for the original dam. The project would make use of, but would not interfere with, any existing commercial mining activity. No oil and gas operations exist in the study area. Therefore, no impacts to mineral resources would occur, and no further evaluation is included in this EIS/EIR. Geology and soils (including peat), however, are addressed in Section 4.4, Geology, Soils, and Seismicity.