EAST BRANCH EXTENSION
PHASE I IMPROVEMENTS PROJECT

Draft Supplemental Environmental Impact Report No. 2
SCH No. 2007111106

Prepared for:
Department of Water Resources

March 2009

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EXECUTIVE SUMMARY

ES.1 Introduction

The California Department of Water Resources (DWR) has prepared this Draft Supplemental Environmental Impact Report (Draft SEIR) to provide the public and responsible and trustee agencies with information about the potential effects, both beneficial and adverse, on the local and regional environment associated with construction and operation of the East Branch Extension – Phase I Improvements project (proposed project). This Draft SEIR has been prepared pursuant to the California Environmental Quality Act (CEQA) of 1970 (amended), codified at California Public Resources Code Sections 21000 et. seq., and the CEQA Guidelines in the Code of Regulations, Title 14, Division 6, Chapter 3.

The Crafton Hills Reservoir lies in the easterly edge of Crafton Hills, within the City of Yucaipa, in southern San Bernardino County, California. The proposed project would enlarge the existing Crafton Hills Reservoir from the current operational (active) storage capacity of 85 acre-feet to approximately 225 acre-feet. In addition, a one-half mile segment of a 48-inch diameter pipeline would be constructed to connect Reach 1 of the East Branch Extension pipeline to the Yucaipa Pipeline.

This document is being circulated to local, state and federal agencies, and to interested organizations and individuals who may wish to review and comment on the Draft SEIR. Publication of this Draft SEIR marks the beginning of a 45-day public review period, during which written comments may be directed to the address below. Comments on the project should be directed to:

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ES.2 Background

The proposed project includes improvements to facilities that are part of the DWR's State Water Project (SWP) and serves two State Water Contractors: San Gorgonio Pass Water Agency

(SGPWA) and San Bernardino Valley Municipal Water District (SBVMWD). The SWP is the nation's largest state-built water conveyance system, which includes reservoirs, lakes, and storage tanks; canals, tunnels and pipelines; and pumping and power plants. The system conveys water to 29 State Water Contractors, including SGPWA and SBVMWD. The SGPWA is a wholesale water agency whose service area encompasses approximately 220 square miles in western Riverside County in the Beaumont Plains and San Gorgonio Pass geographic areas, between the cities of Yucaipa and Palm Springs, California. The SBVMWD is a wholesale water agency whose service area encompasses approximately 325 square miles, including the eastern two-thirds of the San Bernardino Valley, the Crafton Hills and a portion of the Yucaipa Valley.

In 1994, the SGPWA adopted an EIR for their Water Importation Project (1994 WIP EIR) that envisioned a water conveyance system that could convey their full SWP Table A amount of 17,300 afy to their service area. The Water Importation Project (WIP) included raw water conveyance and delivery facilities (pipelines), groundwater recharge facilities, pump stations, recovery wells, and water treatment facilities.

In 1995, SGPWA requested that DWR consider implementation of the WIP as an extension of the East Branch of the California Aqueduct. DWR prepared a feasibility study and determined that it had the authority to integrate the WIP into the SWP. DWR approved implementation of the WIP as the East Branch Extension of the California Aqueduct and subsequently adopted the SGPWA WIP EIR. DWR commenced engineering studies of the WIP, which resulted in changes to, and additions to, the planned project features, including a surface storage reservoir. As the new lead agency for the project, DWR prepared a Supplemental EIR to address the changes in the project design originally approved under the SGPWA WIP EIR. *Supplemental EIR No.1 for the East Branch Extension Phase I* was certified by DWR in March 1998 (1998 EBX SEIR). The Supplemental EIR included the existing Crafton Hills Reservoir in the first phase of what was expected to be a two-phase project. The EIR for Phase II of the East Branch Extension was released for public review and comment in August 2008.

Phase I of the East Branch Extension, which included the construction of Crafton Hills Reservoir, was completed in 2003. Reach 1 of the East Branch Extension utilized SBVMWD's existing Foothill Pipeline to convey 8,650 afy of water east of the Crafton Hills, with operational storage available at Crafton Hills Reservoir. The principal features of the reservoir included a zoned earthfill dam, an uncontrolled overflow spillway, a 54-inch diameter inlet pipeline, 54-inch diameter outlet pipeline, a 12-inch diameter emergency release blow-off, and access roads.

ES.3 Project Objectives

The objectives of the proposed project are as follows:

1. Enhance the East Branch Extension's operating flexibility and reliability; and
2. Reduce energy demand during peak demand periods.

ES.4 Project Description

The proposed project includes enlargement of the Crafton Hills Reservoir and construction of the connector pipeline.

ES.4.1 Connector Pipeline Alignment

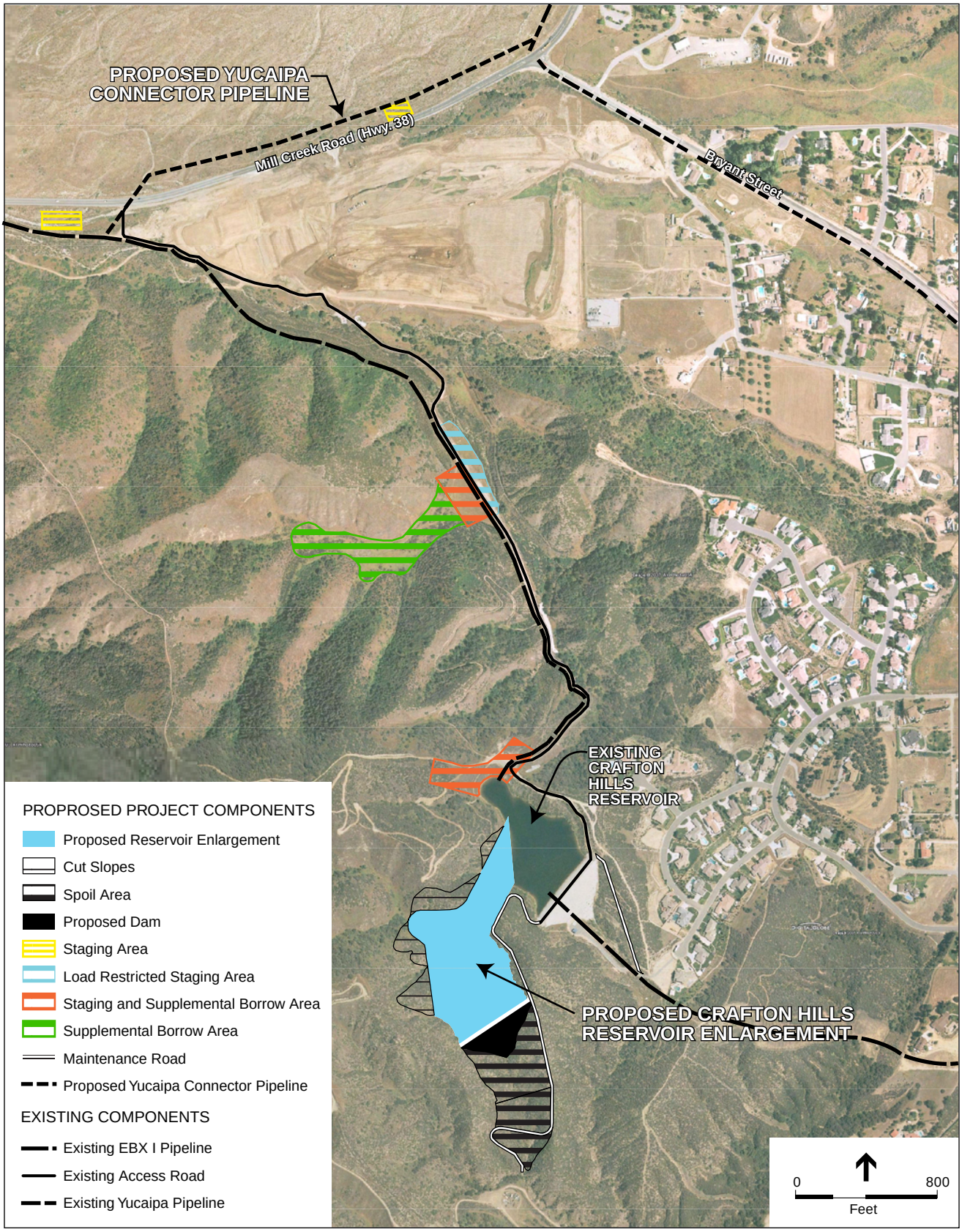
The proposed project would construct a half-mile segment of a 48-inch diameter connector pipeline between the East Branch Extension Pipeline (owned by DWR) and the 48-inch diameter Yucaipa Pipeline (owned by SBVMWD). The pipeline would be constructed prior to the new dam construction. The proposed connector pipeline would extend northeast from the East Branch Extension Pipeline across Mill Creek Road (Hwy. 38), continuing northeast parallel to Mill Creek Road and connecting to the Yucaipa Pipeline just north of Bryant Street (Figure ES-1). Appurtenant features would include three vault structures that would house in-line valves and structures for air, vacuum, and blow-off valves. A maintenance road would also be provided along the pipeline alignment. The pipeline would maintain water deliveries while the Crafton Hills Reservoir is off-line and under construction. DWR would acquire an easement for the proposed connector pipeline.

ES.4.2 Crafton Hills Reservoir Enlargement

The proposed project would enlarge the existing Crafton Hills Reservoir from the current operating storage capacity of 85 af to approximately 225 af. The reservoir enlargement would not increase the conveyance capacity of the East Branch Extension, but would substantially enhance the system's operating flexibility and reliability. The proposed project does not include expansion of the reservoir inlet or outlet pipeline capacities, nor does it change the normal minimum or maximum pool elevations.

The reservoir would be enlarged by constructing a new earth dam in the adjoining drainage to the west of the existing reservoir. A notch in the ridge dividing the existing reservoir from the drainage would be excavated to serve as a connecting channel between the existing reservoir and proposed enlargement area. **Figure ES-1 s**hows the preliminary site plan for the proposed project, including the location of the new dam at the southeastern end of the proposed enlargement area. DWR would acquire the land for the proposed reservoir enlargement, dam, maintenance roads, and spoil area.

Construction of the reservoir, including vehicle and equipment staging areas, would affect approximately 30 acres (Figure ES-1). Following the completion of the connector pipeline bypass, the existing reservoir would be drained. Vegetation and debris removal would be performed in the existing reservoir and possible surface treatments added inside the reservoir below the maximum water surface to minimize formation of algae. Some of the material excavated from the ridgeline, surrounding hillsides, and within the footprint of the enlarged reservoir would be used to construct the new dam with excess material spoiled directly



SOURCE: GlobeXplorer, 2007; DWR, 2007.

DWR - Crafton Reservoir . 206008.04

Figure ES-1
Project Location Map

downstream of the new dam (Figure ES-1). The proposed earth dam would have a maximum height of 90 feet from its downstream toe and a crest elevation of 2,932 feet amsl. The normal maximum water surface elevation for the new expanded reservoir would remain at 2,925 feet amsl with an operational storage capacity of 225 af. The maximum water surface area at maximum elevation would increase to approximately 15 acres.

ES.5 Project Alternatives

An EIR must describe a range of reasonable alternatives to the proposed project or alternative project locations that could feasibly attain most of the basic project objectives and would avoid or substantially lessen any of the significant environmental impacts to the proposed project. The alternatives analysis must include the "No Project Alternative" as a point of comparison. The No Project Alternative includes existing conditions and reasonably foreseeable future conditions that would exist if the proposed project were not approved (*CEQA Guidelines* §15126.6).

The alternatives analysis is presented in Chapter 6 and summarizes the screening process that DWR implemented to identify viable project alternatives. The screening process includes consideration of three criteria:

- Ability to meet the project objectives;
- Economic and engineering feasibility; and
- Ability to reduce significant environmental effects associated with the proposed project.

The alternatives evaluated for viability include raising the existing dam, an alternative reservoir enlargement area within the Crafton Hills, constructing new storage tanks instead of enlarging the existing reservoir, and alternate reservoir sizes. The alternatives screening process concludes that the other alternatives are not viable project alternatives. Thus, the alternatives analysis focuses on a comparison of the proposed project and the No Project Alternative.

Under the No-Project Alternative, construction of facilities identified under the proposed project would not be implemented. The current operation of the existing Crafton Hills Reservoir would remain unchanged and the impacts identified in Chapters 3 and 4 that are associated with construction and operation of the proposed project would be avoided. However, the No Project Alternative would not reduce energy demand during peak demand periods. Further, the No-Project Alternative would not enhance the East Branch Extension's operating flexibility and reliability, a primary project objective.

CEQA requires that an EIR identify the environmentally superior alternative. Table 6-2 compares the impacts of the No Project Alternative to the proposed project. The No Project Alternative would avoid all construction and operation impacts associated with the proposed project. Thus, the No Project Alternative would be the environmentally superior alternative. However, the No Project Alternative would not meet any of the project objectives. As stated in *CEQA Guidelines* (Section 15126.6(e (2))), if the No Project Alternative is the environmentally superior alternative, the EIR shall determine an environmentally superior alternative among the remaining

alternatives. Therefore, the proposed project is considered the environmentally superior feasible alternative.

ES.6 Summary of Impacts

Table ES-1, at the end of this chapter, presents a summary of the impacts and mitigation measures identified for the proposed project. The complete impact statements and mitigation measures are presented in Chapter 3. The level of significance for each impact was determined using significance criteria (thresholds) developed for each category of impacts; these criteria are presented in the appropriate sections of Chapter 3. Significant impacts are those adverse environmental impacts that meet or exceed the significance thresholds; less-than-significant impacts would not exceed the thresholds. Table ES-1 indicates the measures that will be implemented to avoid, minimize, or otherwise reduce significant impacts to a less-than-significant level.

This Draft SEIR is Supplemental EIR No. 2 to the 1994 WIP EIR. The proposed Crafton Hills Reservoir Enlargement is subject to the mitigation measures previously adopted by DWR as part of the 1994 WIP EIR and the 1998 EBX SEIR. When appropriate and applicable, mitigation measures from these previous documents are identified in Chapter 3 and Chapter 4 to mitigate impacts associated with the proposed project. New, additional mitigation measures are included when necessary, as well. For mitigation measures presented in Table ES-1, any modifications to the previous measures have been underlined.

ES.7 Organization of this SEIR

This Draft SEIR has been organized into the following chapters:

ES. Executive Summary. This chapter summarizes the contents of the Draft SEIR.

1. **Introduction and Project Background.** This section discusses the CEQA process and the purpose of the SEIR and provides background info on the proposed project.
2. **Project Description.** This section provides an overview of the proposed project, describes the need for and objectives of the proposed project, and provides detail on the characteristics of the proposed project.
3. **Environmental Setting, Impacts and Mitigation Measures.** This chapter describes the environmental setting and identifies impacts of the proposed project for each of the following environmental resource areas: Aesthetics; Air Quality; Biological Resources; Cultural Resources; Geology and Soils; Hazards and Hazardous Materials; Hydrology, Groundwater Quality, and Water Quality, Land Use, Agriculture, and Recreation; Noise; Transportation and Traffic; and Utilities, Energy, and Service Systems. Measures to mitigate the impacts of the proposed project are presented for each resource area.
4. **Cumulative Impacts.** This chapter describes the potential impacts of the proposed project when considered together with other related projects in the project area.

5. **Growth Inducement and Secondary Effects of Growth.** This chapter describes the potential for the proposed project to induce growth.
6. **Alternatives Analysis.** This chapter presents an overview of the alternatives development process and describes the alternatives to the proposed project that were considered.
7. **References.**
8. **Report Preparers.** This chapter identifies authors and consultants involved in preparing this Draft PEIR, including persons and organizations consulted.
9. **Acronyms.**

TABLE ES-1
SUMMARY OF IMPACTS AND MITIGATION MEASURES FOR THE CRAFTON HILLS RESERVOIR ENLARGEMENT PROJECT

Environmental Impact	Mitigation Measures	Significance after Mitigation
Aesthetics		
Scenic Vistas: The proposed project would have a significant and unavoidable impact on scenic vistas.	**AES-1 (Previously AS-1):** Conceptual landscape guidelines shall be established by DWR during preparation of final construction plans for plantings designated in areas to be revegetated or screened from view. These guidelines shall be prepared to illustrate all plant materials, sizes, species, and quantities, and irrigation and preservation techniques. There shall be a variety of landscape types addressed including revegetating graded slopes and earthen berms. Roads and trail cuts shall be vegetated with natural grasses, shrubs and trees to blend with the adjacent landscape character. **AES-2 (Previously AS-2):** DWR shall ensure that plantings shall be integrated with earthen berms and cut slopes as soon as possible to screen undesirable views. For these situations, the landscape design guidelines shall include grading guidelines. Grading guidelines shall address issues such as the area where berms are recommended, the sizes of such berms and recommended slope gradients to minimize soil erosion. **AES-3 (Adapted from AS-8)**: Following reservoir construction, DWR shall revegetate the area of disturbance with plants native to the Crafton Hills. The spoil area downstream of the dam shall be revegetated with plants approved by DSOD. Restoration of disturbed areas shall be limited to areas above the water surface of the reservoir.	Significant and Unavoidable
Scenic Resources: The proposed project would have no impact on resources within a state scenic highway.	None required.	No Impact
Visual Character: The proposed project would significantly affect the visual character of the project areas with incorporation of mitigation measures.	Implementation of AES-1, AES-2, and AES-3.	Significant and Unavoidable
Light and Glare: The proposed project would have no light or glare impacts.	None required.	No Impact
Air Quality		
Consistency with AQMPs: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan with incorporation of mitigation measures.	**AQ-1:** DWR shall ensure that contractors implement a fugitive dust control program pursuant to the provisions of SCAQMD Rule 403. **AQ-2:** DWR shall ensure that construction equipment is properly tuned and maintained in accordance with manufacturer's specifications. **AQ-3:** Coatings and solvents used in the proposed project shall be consistent with applicable SCAQMD Rule 1113.	Less than Significant

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
	AQ-4: Dust control measures such as wetting or use of soil binders shall be implemented on haul roads throughout each construction day to minimize fugitive dust emissions at the closest sensitive receptors. **AQ-5:** Construction vehicle speeds on dirt access roads shall be no greater than 15 miles per hour. **AQ-6:** Wheel washers or other similar methods shall be installed where vehicles exit the construction site onto paved roads. **AQ-7:** Haul vehicles shall be covered or comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads. **AQ-8:** DWR shall ensure that trucks and construction vehicles shall be prohibited from idling in excess of five minutes, both on- and off-site, when not in use. **AQ-9:** Electricity from power poles rather than temporary diesel- or gasoline-powered generators shall be used where available.	
Violation of an Air Quality Standard: The proposed project would emit air pollutants in daily quantities that could exceed SCAQMD significance thresholds during the short-term duration of construction.	Implement Mitigation Measures AQ-1 through AQ-9.	Significant and Unavoidable
Cumulative Air Emissions: Pollutant emissions associated with the proposed project would result in an adverse impact to cumulative air quality.	Implement Mitigation Measures AQ-1 through AQ-9.	Significant and Unavoidable
Effects on Sensitive Receptors: Project operation would not violate air quality standards or contribute substantially to an existing or projected air quality violation nor expose sensitive receptors to pollutant concentrations resulting in an adverse health effect during long-term operation.	None required.	Less than Significant
Odor Impacts: The proposed project would not create objectionable odors affecting a substantial amount of people.	None required.	Less than Significant
Greenhouse Gas Emissions: The proposed project would not conflict with state goals for reducing greenhouse gas emissions.	None required.	Less than Significant

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
Biological Resources		
Special-Status Species and Habitats: The proposed project would have a less than significant effect on riparian habitats or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS with implementation of mitigation measures.	**BIO-1:** DWR shall have a qualified biologist conduct a pre-construction spring/summer floristic inventory and rare plant survey at the proposed project areas to determine and map the location and extent of Plummer's mariposa lily and other special-status plant species populations, including the construction easement and right-of-way. The locations of Plummer's mariposa lily and other special-status plant species affected by project construction and operation shall be identified. **BIO-2:** DWR shall avoid and minimize impacts on special-status plant species by reducing the construction right-of-way through occurrences of special-status plant species to either avoid the occurrence or reduce impacts to the minimum necessary to complete the project. **BIO-3:** DWR shall stake, flag, fence, or otherwise clearly delineate the construction right-of-way that restricts the limits of construction to the minimum necessary to implement the project that also would avoid and minimize impacts on special-status plants where feasible. **BIO-4:** Where avoidance of special-status plant species is not feasible, DWR shall prepare and implement a special-status species habitat restoration plan for unavoidable temporary impacts to special-status plants due to project construction. The restoration plan shall include at a minimum the following measures: • Documentation of the location and extent of special-status plant species affected by construction in areas that would not be permanently cleared or filled and quantification of the temporary impacts based on acres of habitat, individual plants, and/or other means to clearly articulate the unavoidable impacts. • Goals and objectives for special-status plant species that establish the quantifiable criteria for successful implementation and completion of the restoration plan. • A salvage and replacement program for the top 6 to 12 inches of surface material and topsoil including plant material and duff. • A salvage and replanting program for perennial special-status species. • An invasive plant species maintenance, monitoring, and removal program. • Success criteria that establishes yearly thresholds for growth and establishment of special-status plant species on an acreage extent of occurrence or per plant basis. **BIO-5:** Where permanent loss of special-status plant habitat occurs, DWR shall prepare and implement a special-status species compensation plan for unavoidable permanent impacts to special-status plants due to project operation. The compensation plan shall include at a minimum the following measure: • Purchase of compensatory mitigation lands or credits at an approved conservation bank at a minimum 1:1 ratio for the preservation in perpetuity and dedication in deed restriction, conservation easement, or some other suitable land conservation instrument with known occurrences of Plummer's mariposa lily.	Less than Significant

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
	BIO-6: DWR shall have a qualified biologist conduct pre-construction spring/summer active season general reconnaissance and trapping surveys for the special-status wildlife species within the proposed project area to determine and map the location and extent of special-status species occurrence(s), including the construction easement and right of way. **BIO-7:** DWR shall stake, flag, fence, or otherwise clearly delineate the construction right-of-way that restricts the limits of construction to the minimum necessary to implement the proposed project that also would avoid and minimize impacts on special-status wildlife species and RAFSS habitat. **BIO-8:** DWR shall have a qualified biologist conduct a pre-construction capture, salvage, and relocation effort to remove special-status wildlife species from the project area to avoid and minimize impacts to these species. **BIO-9**: During construction, DWR shall enlist the services of a biological construction monitor to conduct, as necessary, capture, salvage, and relocation efforts to remove special-status wildlife species from the project area to avoid and minimize impacts to these species. **BIO-10:** Where avoidance of special-status wildlife species is not feasible, DWR, in consultation with CDFG and USFWS, shall prepare and implement a special-status wildlife species and RAFSS habitat restoration plan for unavoidable temporary impacts to special-status wildlife and RAFSS habitat due to project construction. The restoration plan shall be part of that specified for special-status plants in Mitigation Measure BIO-4 and shall include at a minimum the following measures: • Documentation of the location and extent of special-status wildlife species and occupied habitat affected by construction and quantification of impacts based on acres of occupied habitat, and/or other means to clearly articulate the unavoidable impacts. • Goals and objectives for the RAFSS and special-status wildlife species that establishes the quantifiable criteria for successful implementation and completion of the restoration plan. • An invasive plant species maintenance, monitoring, and removal program. **BIO-11:** Where avoidance of special-status species is not feasible, DWR, in consultation with CDFG and USFWS, shall prepare and implement a special-status species and habitat compensation plan for unavoidable permanent impacts to special-status wildlife species, and conversion of RAFSS and upland habitat. The compensation plan shall include at a minimum the following measure: • Purchase of compensatory mitigation lands or credits at a conservation bank at a minimum 1:1 ratio for the preservation in perpetuity and dedication in deed restriction, conservation easement, or some other suitable land conservation instrument over RAFSS and/or chaparral upland habitat. This compensatory mitigation can be satisfied under the same habitat acquisition/conservation credit program under Mitigation Measure BIO-5 that is compatible for both the impacted plant and wildlife species and RAFSS/upland habitat.	

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
	BIO-12: DWR shall have a qualified biologist conduct a pre-construction nesting season protocol survey for the coastal California gnatcatcher within the proposed pipeline project area to determine and map the location and extent of nesting coastal California gnatcatcher occurrence(s) within the construction right-of-way. **BIO-13:** DWR shall have a qualified biologist conduct a pre-construction spring/summer active season general reconnaissance for nesting/roosting special-status mobile bird and bat species, and other nesting birds within the proposed project areas to determine and map the location and extent of special-status species occurrence(s). **BIO-14:** DWR shall avoid direct impacts on nesting coastal California gnatcatchers and any nesting birds located within the construction right of way. This could be accomplished by establishing the construction right of way and removal of plant material outside of the typical range of the breeding bird season (February 1 through August 31). **BIO-15:** If construction and vegetation removal is proposed for the bird nesting period February 1 through August 31, then active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone established dependent on the species and as approved by the USFWS and CDFG. Nest sites shall be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist. **BIO-16:** If a natal bat roost site is located during pre-construction surveys, it shall be avoided with non-disturbance buffer zone established by a qualified biologist until the site is abandoned. **BIO-17:** DWR shall minimize impacts on documented locations of nesting coastal California gnatcatchers and any nesting birds by reducing the construction right-of-way through areas of occurrences to either avoid the occurrence or reduce impacts to the minimum necessary to complete the proposed project. **BIO-18:** DWR shall stake, flag, fence, or otherwise clearly delineate the construction right-of-way that restricts the limits of construction to the minimum necessary to implement the proposed project that also would avoid and minimize impacts on special-status wildlife species and RAFSS habitat. **BIO-19:** DWR shall purchase compensatory mitigation lands or credits at a conservation bank at a minimum 1:1 ratio for unavoidable permanent impacts to open space habitat. This compensatory mitigation can be satisfied under the same habitat acquisition/conservation credit program under Mitigation Measures BIO-5 and BIO-11 that is compatible for both the impacted plant and wildlife species and RAFSS/upland habitat.	
Wetlands and Waters of the U.S./State: The proposed project would have no impact on wetlands as defined by Section 404 of the Clean Water Act and would have a less than significant impact on jurisdictional waters of the U.S./State.	None required.	Less than Significant

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
Wildlife Movement Corridors: The proposed project would have a less than significant impact on wildlife movement.	None required.	Less than Significant
Local Polices, Ordinances, and Habitat Conservation Plans: The project is not located within a federally adopted Habitat Conservation Plan, Natural Community Conservation Plan, or within a Significant Ecological Area.	None required.	No Impact
Cultural Resources		
Archeological Resources: Construction of proposed facilities would have a less-than-significant impact on known or unknown cultural resources with mitigation.	**CR-1: Avoidance.** DWR shall narrow the construction zone to avoid sites CH-GPS6, CH-GPS7, and CH-GPS9 where feasible. If appropriate, prior to construction, a qualified archaeologist (defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology) shall mark exclusion zones around known archaeological sites that can be avoided to ensure they are not impacted by construction. Ground-disturbing activities, including brush clearance and grading, occurring within 100 feet of sites CH-GPS6, CH-GPS7, and CH-GPS9 shall be monitored by a qualified archaeologist. **CR-2: Evaluation**. If avoidance is not feasible, prior to any ground disturbing activity, sites CH-GPS6, CH-GPS7, and CH-GPS9 shall be evaluated further by a qualified archaeologist to determine their potential significance. The qualified archaeologist shall prepare a report evaluating each known archaeological site and noting whether the site could be significant. The report will determine whether additional evaluation would be required prior to the destruction of each site. The report will also conclude whether a monitor is necessary on site during excavation activities. DWR shall consult with the SHPO to determine the eligibility of resources as historic properties, and the effect of the proposed project on identified historic properties. DWR shall implement additional data recovery if requested by SHPO. **CR-3: Inadvertent Discovery.** In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and DWR shall consult with a qualified archaeologist to assess the significance of the find. If any find is determined to be significant, representatives of DWR and the qualified archaeologist would meet to determine the appropriate course of action. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards. **CR-4: Additional Phase I Surveys.** A Phase I cultural resources survey shall be conducted for the proposed maintenance road below the existing dam, including appropriate archival records searches and field surveys. Following completion of the Phase I cultural resources survey, Mitigation Measures CR-1 and CR-2 shall also be applied to any additional known or newly recorded cultural sites within the APE of the proposed maintenance road.	Less than Significant

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
Native American Resources: Construction of proposed facilities would have a less-than-significant impact on unknown buried cultural resources with mitigation.	**CR-5:** If human remains are discovered during construction activities, no further disturbance to the site shall occur until the County Coroner is notified. If the coroner determines the remains to be Native American, the coroner shall notify the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the person or persons it believes to be the Most Likely Descended of the deceased. Under the amended 5097.98, the Most Likely Descended is required to make recommendations for treatment of any remains. DWR shall cease construction activities at the discovery site until the remains have been removed and the site cleared by Native American Heritage Commission and the County Coroner.	Less than Significant
Paleontological Resources: Construction of proposed facilities would have a less-than-significant impact on paleontological resources with mitigation.	**CR-6:** If paleontological resources are encountered during the course of construction and monitoring, the applicant shall halt or divert work and notify a qualified paleontologist who shall document the discovery as needed, evaluate the potential resource, assess the significance of the find, and develop an appropriate treatment plan in consultation with the applicant.	Less than Significant
Geology and Soils		
Surface Rupture: The proposed project would not be located in areas susceptible to surface rupture.	None required.	Less than Significant
Seismic Ground Shaking: Strong seismic ground shaking would subject the proposed project to a less than significant impact.	None required.	Less than Significant
Seismic Ground Failure including Liquefaction: Seismic ground failure including liquefaction would subject the proposed project to a less than significant impact.	None required.	Less than Significant
Landslides or other Geologically Unstable Area: Landslides and the presence of other geologically unstable areas would subject the proposed project to a less than significant impact.	None required.	Less than Significant

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
Soil Erosion and Loss of Topsoil: The proposed project would result in a less than significant impact on soil erosion with incorporation of the mitigation measure.	Implement Mitigation Measure AES-1.	Less than Significant
Expansive Soil: The proposed project components are not located on expansive soil types as defined in Table 18-1-B of the Uniform Building Code.	None required.	No Impact
Soil Suitability for Septic System: The proposed project would not require a septic system.	None required.	No Impact
Mineral Resources: The proposed project would have a less than significant impact related to mineral resource availability and local mineral resource value.	None required.	Less than Significant
Hazards and Hazardous Materials		
Hazardous Material Use: The proposed project would not expose people or the environmental to hazardous materials with incorporation of the mitigation measure.	**HA-1:** DWR shall require the construction contractor to develop and implement a hazardous materials construction site plan that includes BMPs that would prevent the accidental release of hazardous materials. The plan shall include, but not be limited to, the following BMPs: • Follow manufacturers' recommendations and regulatory requirements for use, storage, and disposal of chemical products and hazardous materials used in construction; • During routine maintenance of construction equipment, properly contain and remove grease and oils; and • Properly dispose of discarded containers of fuels and other chemicals.	Less than Significant
Hazardous Material Use Near Schools: The use of hazardous materials during construction of the proposed project would not impact schools. The closest school is approximately three-quarters of a mile from the project site.	None required.	No Impact

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
Hazardous Material Sites: The proposed project is not located on any hazardous material sites, pursuant to the Government Code Section 65962.5.	None required.	No Impact
Airport Hazards: The proposed project is not located near any of the San Bernardino Airport Land Use Plan safety zones, and there are no private airstrips near the project site.	None required.	No Impact
Emergency Response Plan: The proposed project would not conflict with the implementation of an emergency response plan or interfere with an evacuation route with incorporation of mitigation measures.	**HA-2**: DWR shall update the Emergency Response Plans for the East Branch Extension – Phase I to include the proposed project facilities. Implement Mitigation Measures TR-1 and TR-5.	Less than Significant
Grassland and Wildland Fires: The proposed project would have a less-than-significant impact related to grassland or wildland fire hazards with incorporation of the mitigation measure.	**HA-3:** DWR shall require the construction contractor to implement the following best management practices during construction to prevent wildland fires. • During construction, all staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other flammable material. • Any construction equipment that includes a spark arrestor shall be equipped with a spark arrestor in good working order. • All vehicles and crews working at the project site shall have access to functional fire extinguishers at all times. • Construction crews shall have a spotter during welding activities to look out for potentially dangerous situations, including accidental sparks.	Less than Significant
Hydrology, Groundwater and Water Quality		
Water Quality: The proposed project would have less than significant impact on water quality with implementation of the mitigation measure.	**HYDRO-1:** The SWPPP shall include but not be limited to the following long-term BMPs for the roadway: • Rock-lined or vegetated cut slope protection; • Stabilization of the cut slope surface; • Adequate road drainage (e.g., provide frequent outlets for the road surface to drain); and • Energy dissipation for the drains on the outboard side.	Less than Significant

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
Drainage and Flooding: The proposed project would have a less than significant impact on drainage, flooding and erosion.	None required.	Less than Significant
Embankment Failure: The proposed project would have a less than significant effect on flooding due to dam failure.	**HYDRO-2 (Previously RU-7):** Prior to approval of the proposed project, DWR shall notify all property owners and residents that could be subjected to flooding or inundation in the event of an upset condition or dam failure.	Less than Significant
Groundwater Depletion: The proposed project would not deplete groundwater supplies or interfere with groundwater recharge.	None required.	Less than Significant
Seiche, Tsunami, and Mudflow: The proposed project would not result in inundation by a seiche, tsunami, or mudflow.	None required.	Less than significant
Land Use, Agriculture and Recreation		
Effects to an Established Community: The proposed project would have no impact on an established community as it does not include the construction of a roadway or other physical barrier.	None required.	No Impact
Consistency with Land Use Plans and HCPs: The proposed project would have a significant and unavoidable impact on land use as it conflicts the goals of the Crafton Hills Open Space Conservancy and results in a permanent loss of open space.	Implement Mitigation Measures BIO-5 and BIO-11.	Significant and Unavoidable

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
Effects to Agricultural Areas and Farmland: The proposed project would have no impact on agricultural areas and farmland.	None required.	No Impact
Effects to Recreational Facilities: The proposed project would have a less than significant impact on recreational facilities with implementation of mitigation.	**LU-1:** DWR shall notify the Crafton Hills Conservancy members regarding trail closures and shall periodically provide them with updates. DWR shall post signs near trailheads in the vicinity of the construction area noting the duration of construction, the location of closed trails, information on accessing trailheads that avoid the construction area, and a construction contact number. DWR also shall notify the San Bernardino National Forest San Gorgonio Ranger Station regarding trail closures near the proposed connector pipeline. **LU-2**: DWR shall allow for hiking access along the new maintenance road once construction is complete in order to allow the City trail to remain intact. If hiking access is not feasible, DWR shall re-route the trail in order to maintain its connection to other trails within the Crafton Hills.	Less than Significant
Noise		
Noise Standards: The proposed project would not exceed noise standards with implementation of mitigation measures but would raise ambient noise levels for the duration of project construction.	**N-1:** DWR shall require construction contractors to minimize construction noise by implementing the following measures: • **(Adapted from N-1)** During construction, the contractor shall outfit all equipment, fixed or mobile, with properly operating and maintained exhaust and intake mufflers, consistent with manufacturers' standards. • Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used where feasible. Quieter procedures, such as use of drills rather than impact tools, shall be used whenever feasible. • **(Adapted from N-2)** Stationary noise sources that could affect adjacent receptors shall be located as far from adjacent receptors as possible. **N-2 (Adapted from N-3 and N-4):** DWR shall ensure that the construction contractor avoids noise sensitive hours as follows: • Construction activities shall be limited to between 7:00 a.m. and 7:00 p.m., Monday through Saturday, and not permitted Sundays and federal holidays. • Any construction activity anticipated to occur outside those hours shall be approved in writing by the appropriate local government agency prior to such construction. **N-3:** DWR shall require construction contractors to minimize construction noise nuisance by implementing the following measures: • Signs shall be posted at the construction sites that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number in the event of problems.	Significant and Unavoidable

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
	• An on-site complaint and enforcement manager shall respond to and track complaints and questions related to noise. • **(Adapted from N-5)** DWR construction contractors shall select haul routes which would minimize noise impacts to residential neighborhoods and other sensitive receptors. DWR construction contractors shall consult with local planning jurisdictions in order to determine and select the most feasible haul routes to minimize noise impacts in residential areas and in the vicinity of noise-sensitive receptors.	
Vibration: The proposed project would not result in damage or nuisance to neighboring properties or sensitive receptors from construction related activities.	None required.	Less than Significant
Permanent Noise Increase: The proposed project would not result in a permanent increase in ambient noise.	None required.	Less than Significant
Airport Noise: The proposed project would not expose sensitive receptors to airport noise.	None required.	No Impact
Traffic and Transportation		
Construction Traffic: Construction activities for the proposed project would have a less than significant impact on roadway traffic with incorporation of mitigation measures.	**TR-1: Prior to construction,** DWR shall require the contractor to prepare a Traffic Control Plan in accordance with professional engineering standards and the guidelines for safety and traffic provided in the Caltrans Construction Manual (revised 2008). The Traffic Control Plan would include, but not be limited to, the following requirements: • Maintain access for local land uses including residential driveways, commercial properties, and agricultural lands during construction activities. • Maintain emergency services access to local land uses at all times for the duration of construction activities. Local emergency service providers shall be informed of lane/road closures and detours. • Develop circulation and detour plans to minimize impact to local street circulation, including bikeways. This may include the use of signing and flagging to guide vehicles and cyclists through and/or around the construction zone. This may also include development of turning lanes for trucks delivering material and equipment to construction sites. • Avoid peak travel periods when considering partial road or lane closures. • Post advanced warning of construction activities to allow motorists to select alternative routes in advance.	Less than Significant

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
	• Post signs signaling for the presence of slow-moving or slow-turning vehicles in the vicinity of construction area, as necessary. • Arrange for a telephone resource to address public questions and complaints during project construction. • Compliance with roadside safety protocols, so as to reduce the risk of accident. **TR-2 (Adapted from LU-9):** DWR shall coordinate the design of the connector pipeline with Caltrans District 8 and obtain the necessary road encroachment permits prior to construction. DWR shall comply with the applicable conditions of approval. Road encroachment permits will be necessary for construction within Mill Creek Road (SR-38). **TR-3:** DWR shall provide staging areas for excavated material within the construction zone or at locations accessible by construction roads.	
Level of Service Standard: The proposed project would not impact the LOS standard established by San Bernardino County.	None required.	Less than Significant
Effects to Air Traffic Patterns: The proposed project would not have an impact on air traffic patterns.	None required.	No Impact
Effects on Parking: Construction activities for the proposed project would have a less than significant impact on the demand for parking with incorporation of the mitigation measure.	**TR-4 (Adapted from C-4):** Prior to the beginning of construction, all contractors shall submit traffic plans denoting employee parking locations and work staging areas to DWR. Potential parking and equipment storage areas may be on-site, with construction easements or parking in an established off-site staging area. No construction worker parking shall be allowed within the travel lanes of roads or highways.	Less than Significant
Effects to Public Roadway Safety: The proposed project would have a less than significant impact on roadway safety with incorporation of the mitigation measures.	Implement Mitigation Measures TR-1 and TR-2.	Less than Significant
Effects to Emergency Access: The proposed project would have a less than significant effect on emergency access with incorporation of the mitigation measures.	**TR-5 (Previously C3):** DWR shall require that the construction contractor notifies the responsible law enforcement agencies and Fire Department two weeks prior to start of work as to when and where construction would begin and end, and shall coordinate their emergency access plans and procedures accordingly. Implement Mitigation Measure TR-1.	Less than Significant

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
Effects to Alternative Transportation Plans: The proposed project would have no impact on alternative transportation plans and policies.	None required.	No Impact
Utilities, Energy and Public Services		
Local Public Services: The proposed project would have no impact on demand for local public services.	None required.	No Impact
Public Utilities: The proposed project would have a less than significant impact on disruption to public utilities with incorporation of the mitigation measures.	**PU-1 (Previously U-2)**: DWR's construction contractor shall coordinate with all potentially affected utility companies and jurisdictions to determine the exact location of all underground utilities prior to doing any work or taking action which could damage such facilities or interfere with their operations. The construction contractor shall protect all existing utility lines and associated substructures from damage unless specifically noted on the plans. The construction contractor shall coordinate in advance any necessary planned utility service outages with the affected utility companies. **PU-2 (Previously U-4)**: All utilities that cross the pipeline trench shall be protected in place, unless otherwise indicated for relocation on the plans. DWR's construction contractor shall be required to notify the utility owner and Underground Service Alert (DigAlert) two (2) working days in advance of the construction crossing and coordinate the construction schedule with the utility service providers. Where indicated on the plans, the contractor shall provide appropriate means to support utilities which lie within excavated areas and which are not self-supporting.	Less than Significant
Solid Waste: The proposed project would have no impact on solid waste and landfill capacity.	None required.	No Impact
Water and Wastewater: The proposed project would not impact water or wastewater treatment capacity or require new water entitlements.	None required.	No Impact
Storm Water: The proposed project would not impact storm water drainage and treatment facilities.	None required.	No Impact

TABLE ES-1 (continued)
SUMMARY OF IMPACTS AND MITIGATION MEASURES

Environmental Impact	Mitigation Measures	Significance after Mitigation
Energy Demand: The proposed project would have a less than significant impact on energy consumption.	None required.	Less than Significant
Cumulative Impacts		
Construction Traffic: The proposed project would have a less than significant impact on traffic with implementation of the mitigation measures.	**CUM-1:** At least two weeks before construction activities begin, DWR shall coordinate with the City of Yucaipa and San Bernardino County to determine other construction projects that would occur at the same time as the Crafton Hills Reservoir Enlargement Project. Haul routes shall be established to avoid heavily congested roads and road construction areas where feasible.	Less than Significant
Air Quality: The proposed project would have a short-term cumulative impact on air quality.	**None available.**	Significant and Unavoidable
Other Cumulative Impacts: The proposed project would have a long-term cumulative impact on aesthetics, biological resources, and land use.	**None available.**	Significant and Unavoidable

CHAPTER 1
Introduction and Project Background

1.1 Purpose of the EIR

The California Department of Water Resources (DWR) has prepared this Draft Supplemental Environmental Impact Report (Draft SEIR) to provide the public and responsible and trustee agencies with information about the potential effects, both beneficial and adverse, on the local and regional environments associated with construction and operation of the East Branch Extension – Phase I Improvements project. The project includes enlargement of the Crafton Hills Reservoir and construction of the Yucaipa Connector Pipeline. This Draft SEIR has been prepared pursuant to the California Environmental Quality Act (CEQA) of 1970 (as amended), codified at California Public Resources Code Sections 21000 et. seq., and the *CEQA Guidelines* in the Code of Regulations, Title 14, Division 6, Chapter 3.

1.2 Project Background

The proposed project includes improvements to facilities that are part of the DWR's State Water Project (SWP) and serve two State Water Contractors: San Gorgonio Pass Water Agency (SGPWA) and San Bernardino Valley Municipal Water District (SBVMWD). A description of the SWP, SGPWA, and SBVMWD is provided below.

1.2.1 State Water Project

The SWP began in 1960 with California voter approval for a statewide distribution system to meet growing water needs. The SWP is the nation's largest state-built water conveyance system, which includes reservoirs, lakes, and storage tanks; canals, tunnels and pipelines; and pumping and power plants. The system conveys water to 29 State Water Contractors, including SGPWA and SBVMWD. The agencies then deliver water directly to agricultural and urban water users or to water wholesalers and retailers. For the contractors, the SWP serves as an additional source of water within their service areas that is supplemental to their local sources.

The SWP system begins in the Feather River watershed in northern California. In the Sacramento-San Joaquin Delta southwest of Sacramento, it enters the 444-mile long California Aqueduct. Water is conveyed to the Edmonston Pumping Plant where pumps lift the water almost 2,000 feet up and over the Tehachapi Mountains. As water reaches the southern base of the Tehachapis, the aqueduct splits into two branches (the East Branch and West Branch). The West Branch carries water through Oso Pumping Plant, Quail Lake, Lower Quail Canal, and

William E. Warne Powerplant into Pyramid Lake in Los Angeles County. From there, water flows through the Angeles Tunnel, Castaic Powerplant, Elderberry Forebay, and Castaic Lake, the western terminus of the SWP. The East Branch continues through an open aqueduct across the Antelope Valley, enters underground pipelines and discharges into Lake Silverwood near the Cajon Pass. The 28-mile-long Santa Ana Pipeline then takes it underground to Lake Perris, the southernmost terminal of the SWP. The East Branch Extension delivers water from the Foothill Pipeline at the Devil Canyon Power Plant Afterbay to the eastern part of San Bernardino Valley, Yucaipa Valley and the San Gorgonio Pass area in San Bernardino and Riverside counties. **Figure 1-1** depicts the SWP facilities in the southern portion of the state. **Figure 1-2** shows the East Branch Extension, including the Crafton Hills Reservoir.

The amount of water available to the SWP fluctuates widely each year due to factors such as hydrologic conditions, flood management needs, the capacity of SWP storage and conveyance facilities, changing weather-temperature conditions, water quality, and environmental requirements. Water deliveries are based on the long-term contracts that DWR has with each of the 29 contractors. The contractors are divided between agricultural and municipal and industrial (M&I) water supply agencies. The contracts outline how the contractors will repay all SWP capital and operating costs in exchange for the state's financing, constructing and operating the SWP. The contracts also cover issues such as how water is allocated in the event of either a surplus or shortage of supplies and DWR's obligation to take all reasonable effort to complete needed SWP facilities. The contracts were modified in 1994 under the Monterey Agreement, a set of 14 principles having the ultimate goals of increasing reliability of existing water supplies, providing stronger financial management, and increasing water management flexibility. The Monterey Agreement was agreed upon by DWR and SWP contractor representatives.

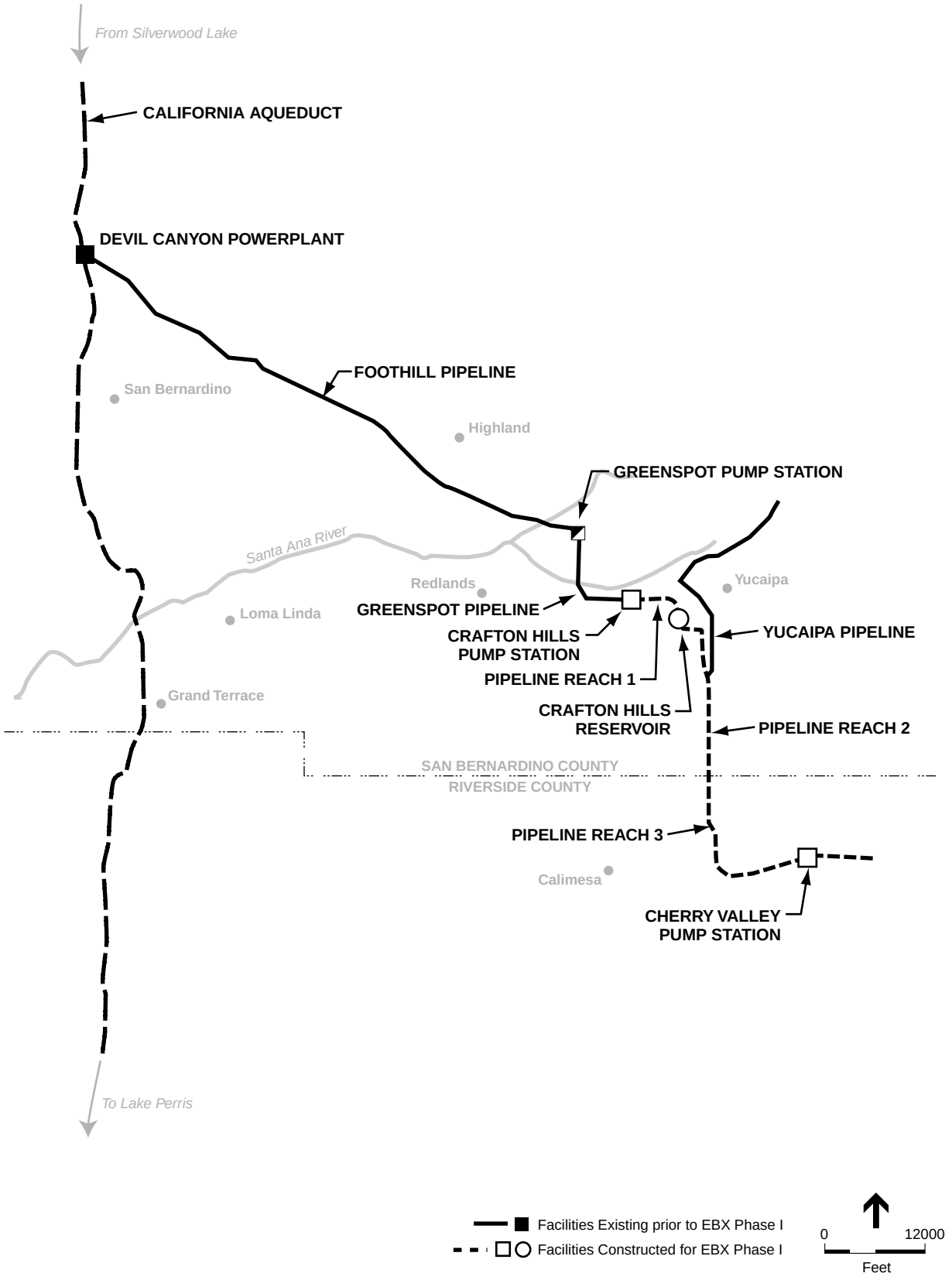
Article 6 of the contracts defines Table A amounts as the amount of water a contractor has contracted for with DWR for each year the contract is in effect. Table A amounts are used in allocating among contractors the total SWP water supply that is determined to be available for delivery each year. Table A amounts also indicate the maximum amount of dependable SWP water DWR agrees to deliver to a contractor during a year. Under the Monterey Agreement, the sum of the maximum Table A amounts of all contractors is not to exceed 4.185 million af. Articles 18 and 21 specify how DWR should allocate water to contractors during a temporary shortage or surplus of water supply. Shortages and surpluses are required to be shared among all contractors in proportion to their Table A amounts. Article 21 allows for surplus water deliveries only after all Table A deliveries have been fully met, SWP reservoirs are full, the Delta can accommodate more deliveries, and the Banks Pumping Plant has spare capacity. Article 53 of the Monterey Agreement provided for permanent transfers and retirements of Table A amounts. Agricultural contractors would permanently retire 45,000 af of Table A amount and permanently transfer up to 130,000 af of Table A amount to M&I contractors.

The total Table A water supply for each year is estimated based on a variety of factors including storage reservoir levels, surface water flow levels, Delta conditions, and contractor delivery requests. DWR determines an initial Table A allocation percentage, based on Table A amounts.

SOURCE: DWR, 2008.

DWR - Crafton Reservoir . 206008.04

Figure 1-1
State Water Project Overview



SOURCE: ESA, 2007

DWR - Crafton Reservoir . 206008.04

Figure 1-2
EBX-Phase I Components

The allocation percentage determines the percentage of Table A amounts that will be allocated to contractors for the year. The initial allocation of water is based on a conservative assumption of future precipitation and is typically increased over the course of the year as hydrological conditions become more defined. Table A allocations are not the same as Table A deliveries, as contractors may not take delivery of all the water allocated to them.

From 1980 to 1989, DWR was able to meet 100 percent of the contractors' requests for Table A water. Between 1990 and 1994, DWR had greater difficulty meeting demand as several dry years occurred. Contractors received less than 50 percent of their requests in 1991 and 1992. In recent years, the SWP has been able to deliver full Table A amounts only in wet years. SWP deliveries can be substantially less than full Table A amounts during dry years. This has been the result of a rise in contractors' demand levels, more stringent water quality requirements, and new environmental regulations.

Recent developments regarding the Delta have introduced uncertainty into the SWP's ability to convey water to the contractors. In 2004, DWR and the Bureau of Reclamation developed a new Operating Criteria Plan (OCAP) for the SWP and the Central Valley Project (CVP). The OCAP included the project descriptions required for a comprehensive biological assessment of the effects of SWP and CVP operations on listed species. In 2004, USFWS issued a non-jeopardy biological opinion (BO) with regards to impacts to the Delta smelt caused by revised operations of the SWP and CVP. The BO concluded that adverse effects to the Delta smelt would be avoided or minimized by the conservation and adaptive management measures included in the OCAP. In May 2007, the Wanger decision made by the U.S. District Court found the OCAP BO for Delta smelt to be inconsistent with the Federal Endangered Species Act and required that it be rewritten. On December 14, 2007 the court established interim operating rules while the BO is being rewritten that include in-Delta flow limits in Old and Middle Rivers which have the effect of restricting SWP and CVP pumping (DWR, 2008). The East Branch Extension – Phase I Improvements project would not affect these interim operating rules or result in additional water being taken from the Delta.

1.2.2 San Gorgonio Pass Water Agency

The SGPWA is a wholesale water agency whose service area encompasses approximately 220 square miles in western Riverside County in the Beaumont Plains and San Gorgonio Pass geographic areas, between the cities of Yucaipa and Palm Springs, California. The SGPWA service area includes the cities of Banning, Beaumont, Calimesa, the community of Cherry Valley, the Morongo Indian Reservation and portions of the Cabazon area. The SGPWA is one of 29 State Water Contractors. The SGPWA uses imported water, including SWP water, to recharge the Beaumont and Cabazon groundwater basins and to reduce groundwater overdraft. The Agency distributes this water to local water retailers within its service area. SGPWA's SWP Table A amount is 17,300 acre-feet per year (afy).

1.2.3 San Bernardino Valley Municipal Water District

The SBVMWD is a wholesale water agency whose service area encompasses approximately 325 square miles, including the eastern two-thirds of the San Bernardino Valley, the Crafton Hills and a portion of the Yucaipa Valley. It includes the cities and communities of Bloomington, Colton, East Highland, Highland, Grand Terrace, Loma Linda, Mentone, Rialto, Redlands, Yucaipa and San Bernardino. The SBVMWD water portfolio includes surface water from the Santa Ana River and its major tributaries, Mill Creek and Lytle Creek; groundwater from the Bunker Hill basin; and imported water from the SWP. The SBVMWD receives SWP water at the Devil Canyon Power Plant Afterbay. The SWP water is then conveyed eastward to spreading grounds and agricultural and wholesale domestic delivery points in the San Bernardino basin. The water is also conveyed westward to recharge the Colton-Rialto basin. SBVMWD's annual Table A amount is 102,600 af.

1.2.4 Previous Documentation

In 1994, the SGPWA adopted an EIR for their Water Importation Project (WIP) that envisioned a water conveyance system that could convey their full SWP Table A amount of 17,300 af to their service area. The WIP included raw water conveyance and delivery facilities (pipelines), groundwater recharge facilities, pump stations, recovery wells, and water treatment facilities.

In 1995, SGPWA requested that DWR consider implementation of the WIP as an extension of the East Branch of the California Aqueduct. DWR prepared a feasibility study and determined that it had the authority to integrate the WIP into the SWP. DWR approved implementation of the WIP as the East Branch Extension of the California Aqueduct and subsequently adopted the SGPWA WIP EIR. DWR commenced engineering studies of the WIP, which resulted in changes to, and additions to, the planned project features, including a surface storage reservoir. As the new lead agency for the project, DWR prepared a Supplemental EIR to address the changes in the project design originally approved under the SGPWA WIP EIR. *Supplemental EIR No.1 for the East Branch Extension Phase I* was certified by DWR in March 1998. The Supplemental EIR included the existing Crafton Hills Reservoir in the first phase of what was expected to be a two-phase project. The EIR for Phase II of the East Branch Extension was released for public review and comment in August 2008.

Phase I of the East Branch Extension, which included the construction of Crafton Hills Reservoir, was completed in 2003. Reach 1 of the East Branch Extension utilized SBVMWD's existing Foothill Pipeline to convey water east of the Crafton Hills, with operational storage available at Crafton Hills Reservoir. The principal features of the reservoir included a zoned earth dam, an uncontrolled overflow spillway, a 54-inch diameter inlet pipeline, 54-inch diameter outlet pipeline, a 12-inch diameter emergency release blow-off, and access roads.

1.2.5 Incorporation by Reference

As permitted by Section 15150 of the *CEQA Guidelines*, this Draft SEIR includes by reference technical studies, analyses, and reports from environmental assessments conducted for Phase I

East Branch Extension Project. These include the *San Gorgonio Pass Water Agency Water Importation Project Environmental Impact Report* that was certified in 1994 and associated addenda (1994 WIP EIR) and the *Department of Water Resources Phase I East Branch Extension Project Supplemental Environmental Impact Report* that was certified in 1998 and associated addenda (1998 EBX SEIR).

1.3 CEQA Approach: Supplemental EIR No. 2

At present size, operation of the existing Crafton Hills Reservoir requires DWR to run the pumps at Crafton Hills Pump Station during daily peak energy demand periods. This puts unnecessary load on the electrical grid system. The proposed project would increase the size of the reservoir, allowing DWR to fill the reservoir during off-peak periods of the day, relieving pressure on the energy grid; thus, lowering pumping costs. The reservoir enlargement would not increase the conveyance capacity of the East Branch Extension; but would substantially enhance the system's operating flexibility and reliability.

In addition, a one-half mile segment of a 48-inch diameter pipeline (Yucaipa Connector Pipeline) would be built to connect the East Branch Extension Pipeline to the 48-inch diameter Yucaipa Pipeline owned and operated by the SBVMWD. The pipeline would allow DWR to maintain water deliveries to the East Branch Extension while the reservoir is being enlarged. After the proposed project is completed, the connector pipeline would remain in place to provide operational flexibility in the event of a reservoir outage.

The proposed project is considered to be a new component of the WIP/East Branch Extension evaluated in the 1994 WIP EIR and the 1998 EBX SEIR. Therefore, in accordance with CEQA, it is appropriate to evaluate the environmental impacts of the proposed project in a subsequent or supplemental EIR. Once an EIR has been certified, CEQA allows for a subsequent or supplemental EIR to be prepared when certain conditions have been met. A subsequent EIR is prepared when the lead agency determines one or more of the following:

(1) Substantial changes are proposed in the project, or substantial changes occur with respect to the circumstances under which the project is undertaken, which require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects (CEQA Guidelines §15162(a)(1), (2));

(2) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:

   a. The project will have one or more significant effects not discussed in the previous EIR;

   b. Significant effects previously examined will be substantially more severe than shown in the previous EIR;

   c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the

project, but the project proponents decline to adopt the mitigation measure or alternative; or

d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative (*CEQA Guidelines* §15162(a)(3)).

If one or more of the conditions described above for a subsequent EIR exist, but only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation, then the lead agency may prepare a supplement to an EIR, rather than a subsequent EIR (*CEQA Guidelines* §15163(a)). DWR, as the Lead Agency, has determined that the proposed project meets the conditions for a supplemental EIR.

1.4 CEQA EIR Process

1.4.1 Notice of Preparation

On November 27, 2007, in accordance with Sections 15063 and 15082 of *CEQA Guidelines*, DWR, as Lead Agency, prepared a Notice of Preparation (NOP) of an SEIR and circulated it to local, state, and federal agencies and to other potentially interested parties. The NOP requested comments on the scope of the EIR, and asked that those agencies with regulatory authority over any aspect of the proposed project describe that authority. The comment period extended through January 15, 2008. The NOP provided a general description of the proposed action, a description of proposed reservoir enlargement and connector pipeline, construction methods, and a preliminary list of potential environmental impacts. The NOP and comment letters received in response to the NOP are included in **Appendix A**.

An Initial Study was prepared by DWR to identify potential environmental impacts of the proposed project in advance of this Draft SEIR (see **Appendix B**).

1.4.2 Public Scoping

Pursuant to *CEQA Guidelines* §15083 a public scoping meeting was held on December 11, 2007 at the City of Yucaipa Community Center Banquet Room. Public notices were placed in local newspapers informing the general public of the scoping meeting. The purpose of the meeting was to present the proposed project to the public through use of display maps, route alignments, presentations, and handouts describing project components and potential environmental impacts. DWR staff, local water agency staff, and members of the public attended the scoping meeting. Attendees were provided an opportunity to voice comments or concerns regarding potential effects of the proposed project.

Issues raised during scoping process included concerns about affects to adjacent land owners, storm water discharges, floodplain management, air quality impacts, and aesthetic impacts. **Appendix A** includes the NOP, all comment letters received during the scoping period, and all comments received during the public scoping meeting.

The scope of the Draft SEIR was determined based on the responses to the NOP and the issues raised at the public scoping meeting. Issues not related to environmental effects are not addressed in the Draft SEIR but may be considered by DWR before making a final decision on the proposed project.

1.4.3 Draft SEIR

This document constitutes the Draft SEIR. The report contains a description of the proposed project, description of the environmental setting, identification of project impacts, and mitigation measures for impacts found to be significant, as well as an analysis of project alternatives. The Draft SEIR addresses the potential environmental effects of implementing the proposed project.

Significance criteria have been developed for each environmental resource analyzed in this Draft SEIR, and are defined at the beginning of each impact analysis section. Impacts are categorized as follows:

- Significant and unavoidable;
- Less than significant with mitigation (potentially significant, but can be mitigated to a less-than-significant level);
- Less than significant (mitigation is not required under CEQA, but may be recommended);
- No impact; or
- Beneficial.

For project approval, CEQA requires the elimination, avoidance, or substantial reduction of identified environmental effects where feasible (CEQA Section §15092) and as substantiated in the written findings (CEQA Section §15091). In addition, any remaining significant effects found to be unavoidable under CEQA Section §15091 (including those effects caused by project elements that can not be eliminated) must be deemed acceptable due to overriding considerations (CEQA Section §15093).

1.4.4 Public Review

This document is being circulated to local, state and federal agencies, and to interested organizations and individuals who may wish to review and comment on the Draft SEIR. Publication of this Draft SEIR marks the beginning of a 45-day public review and comment period. During the 45-day review period, DWR will hold a public meeting where the public will have the opportunity to provide oral and written comments on the Draft SEIR. The meeting will be held as follows:

Tuesday, April 7, 2009
7:00 PM
City of Yucaipa Community Center Banquet Room
34900 Oak Glen Rd.
Yucaipa, CA 92399

In addition, comments on the Draft SEIR can be mailed or e-mailed at any time during the 45-day review period to the following representative:

Tom Barnes
on behalf of the California Department of Water Resources
for the East Branch Extension Phase I Improvement
707 Wilshire Boulevard, Ste. 1450
Los Angeles, CA 90017
tbarnes@esassoc.com
213-599-4300-phone
213-599-4301-fax

1.4.5 Final Environmental Impact Report Publication

Written and oral comments received in response to the Draft SEIR will be addressed in a Response to Comments document, which, together with the Draft SEIR, will constitute the Final SEIR. DWR will then consider SEIR certification (*CEQA Guidelines* §15090). Once the SEIR has been certified, DWR may proceed to consider project approval. Prior to approving the proposed project, DWR must make written findings and adopt statements of overriding considerations for each unmitigated significant environmental effect identified in the SEIR in accordance with Section 15091 of *CEQA Guidelines*.

1.4.6 Mitigation Monitoring Program

CEQA requires lead agencies to "adopt a reporting and mitigation monitoring program for the changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment" (CEQA §21081.6, *CEQA Guidelines* §15097). The mitigation measures, if any, adopted as part of this SEIR will be included in a Mitigation Monitoring and Reporting Program (MMRP) and implemented by DWR or other designated responsible agencies.

1.5 Organization of the Draft EIR

This Draft SEIR has been organized into the following chapters:

ES. Executive Summary. This chapter summarizes the contents of the Draft SEIR.

1. Introduction and Project Background. This chapter discusses the CEQA process and the purpose of the SEIR and provides background info on the proposed project.

2. Project Description. This chapter provides an overview of the proposed project, describes the need for and objectives of the proposed project, and provides detail on the characteristics of the proposed project.

3. Environmental Setting, Impacts and Mitigation Measures. This chapter describes the environmental setting and identifies impacts of the proposed project for each of the

following environmental resource areas: Aesthetics; Air Quality; Biological Resources; Cultural Resources; Geology and Soils; Hazards and Hazardous Materials, Hydrology, Groundwater Quality and Water Quality; Land Use, Agriculture and Recreation; Noise; Transportation and Traffic; and Utilities, Energy and Service Systems. Measures to mitigate the impacts of the proposed project are presented for each resource area.

4. **Cumulative Impacts.** This chapter describes the potential impacts of the proposed project when considered together with other related projects in the project area.

5. **Growth Inducement and Secondary Effects of Growth.** This chapter describes the potential for the proposed project to induce growth.

6. **Alternatives Analysis.** This chapter presents an overview of the alternatives development process and describes the alternatives to the proposed project that were considered.

7. **References.**

8. **Report Preparers.** This chapter identifies authors and consultants involved in preparing this Draft SEIR, including persons and organizations consulted.

9. **Acronyms.**

CHAPTER 2
Project Description

2.1 Introduction

The proposed project would enlarge the existing Crafton Hills Reservoir from the current operational (active) storage capacity of 85 acre-feet (af) to approximately 225 af. The reservoir would be enlarged by constructing a new earth dam in the adjoining drainage to the west of the existing reservoir. A ridge separates the existing reservoir from the drainage; a notch in the ridge would be excavated to serve as a connecting channel between the existing reservoir and proposed enlargement area. In addition, a one-half mile segment of a 48-inch diameter pipeline would be constructed to connect the East Branch Extension pipeline to the Yucaipa Pipeline. The connector pipeline would divert imported water that otherwise would flow into Crafton Hills Reservoir to the Yucaipa Pipeline during the project construction period. The connector pipeline would allow DWR to maintain water deliveries to the East Branch Extension pipeline below the Crafton Hills Reservoir while the reservoir is being enlarged. After the proposed project is completed, the connector pipeline would remain in place to provide operational flexibility in the event of a reservoir outage. This chapter identifies the proposed project objectives, describes the project characteristics, and describes proposed construction methods.

2.2 Project Objectives

The proposed project would allow DWR to fill the existing Crafton Hills Reservoir less frequently and during off-peak periods of the day, which would reduce pumping during peak periods, reduce demands on the energy grid, and lower pumping costs. The current size of the Crafton Hills Reservoir is insufficient to efficiently meet local demands. Operating under its present capacity, DWR fills the reservoir throughout the day and night and must operate the pumps at the Greenspot Pump Station and the Crafton Hills Pump Station during daily peak energy demand periods, placing load on the energy grid. The reservoir enlargement would not increase the conveyance capacity of the East Branch Extension, but would substantially enhance the system's operating flexibility and reliability. The primary project objectives are:

1. Enhance the East Branch Extension's operating flexibility and reliability; and
2. Reduce energy demand during peak demand periods.

2.3 Project Location

The Crafton Hills Reservoir lies in the easterly edge of Crafton Hills, within the City of Yucaipa, in southern San Bernardino County, California. The Crafton Hills are characterized by steep ravines and ridgelines. The proposed connector pipeline would be located north of the reservoir, adjacent and parallel to Mill Creek Road. **Figure 2-1** shows the project location.

The existing reservoir is surrounded by open space managed by the Crafton Hills Open Space Conservancy. The neighboring hillsides are undeveloped and the vegetation is primarily chaparral and grassland vegetation. Residential neighborhoods exist within 500 feet east and south of the existing reservoir. An undeveloped ridge separates the existing reservoir from the proposed reservoir enlargement area.

The proposed connector pipeline would be located within undeveloped land parallel to Mill Creek Road at the northern base of the Crafton Hills. Mill Creek is located just north of the proposed alignment.

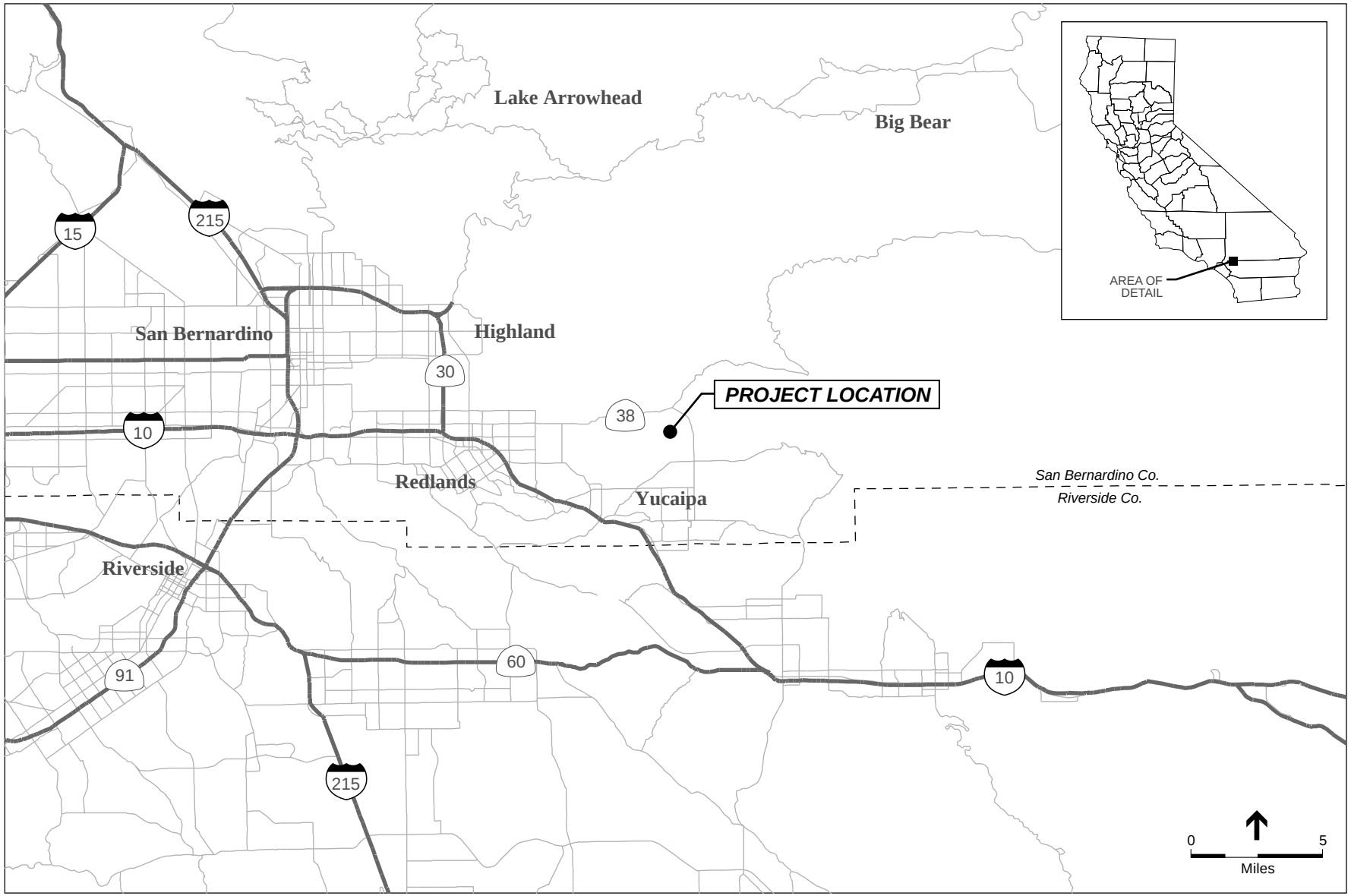
2.4 Project Characteristics

2.4.1 Existing Crafton Hills Reservoir

The existing Crafton Hills Reservoir is owned and maintained by DWR and operated by SBVMWD. The principal features of the reservoir include a zoned earth dam, an uncontrolled spillway, a 54-inch diameter inlet pipeline, 54-inch diameter outlet pipeline, a 12-inch diameter emergency release blow-off, and maintenance access roads. The reservoir has a normal maximum operating capacity of 85 af when the water surface elevation is at the normal maximum design level of 2,925 feet above mean sea level (amsl). The normal minimum water surface elevation for the existing reservoir is 2,905 feet amsl. The existing water surface area at a pool elevation of 2,925 feet amsl is 6.0 acres. The existing reservoir is unlined. The existing dam is a zoned earth dam with a crest elevation of 2,932 feet (excluding camber).

2.4.2 Pipeline Alignment

The proposed project would construct a half-mile segment of a 48-inch diameter connector pipeline between the East Branch Extension Pipeline (owned by DWR) and the 48-inch diameter Yucaipa Pipeline (owned by SBVMWD). The pipeline would be constructed prior to the new dam construction. The proposed connector pipeline would extend northeast from the East Branch Extension Pipeline across Mill Creek Road (Hwy. 38), continuing northeast parallel to Mill Creek Road and connecting to the Yucaipa Pipeline just north of Bryant Street (Figure 2-2). Appurtenant features would include three vault structures that would house in-line valves and structures for air, vacuum, and blow-off valves. A maintenance road would also be provided along the pipeline alignment. The pipeline would maintain water deliveries while the Crafton Hills Reservoir is off-line and under construction. DWR would acquire an easement for the proposed connector pipeline.



SOURCE: Street Map USA, 2007.

DWR - Crafton Reservoir . 206008.04

Figure 2-1

Regional Location Map

2.4.3 Crafton Hills Reservoir Enlargement

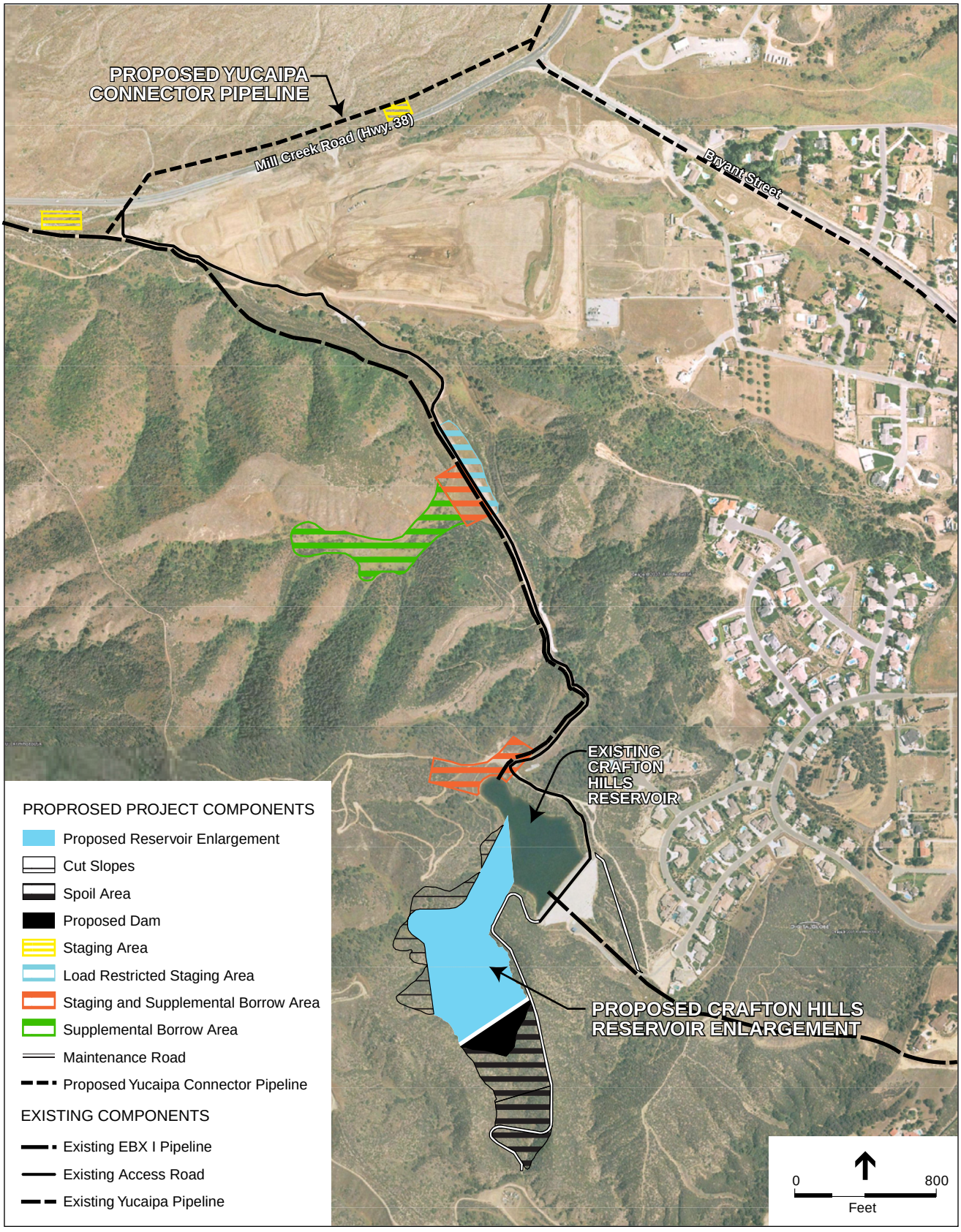
The proposed project would enlarge the existing Crafton Hills Reservoir from the current operating storage capacity of 85 af to approximately 225 af. The reservoir enlargement would not increase the conveyance capacity of the East Branch Extension, but would substantially enhance the system's operating flexibility and reliability. The proposed project does not include expansion of the reservoir inlet or outlet pipeline capacities, nor does it change the normal minimum or maximum pool elevations.

The reservoir would be enlarged by constructing a new earth dam in the adjoining drainage to the west of the existing reservoir. A notch in the ridge dividing the existing reservoir from the drainage would be excavated to serve as a connecting channel between the existing reservoir and proposed enlargement area. **Figure 2-2** shows the preliminary site plan for the proposed project, including the location of the new dam at the southeastern end of the proposed enlargement area. DWR would acquire the land for the proposed reservoir enlargement, dam, maintenance roads, and spoil area.

Construction of the reservoir, including vehicle and equipment staging areas, would affect approximately 30 acres (Figure 2-2). Following the completion of the connector pipeline bypass, the existing reservoir would be drained. Vegetation and debris removal would be performed in the existing reservoir and possible surface treatments added inside the reservoir below the maximum water surface to minimize formation of algae. Some of the material excavated from the ridgeline, surrounding hillsides, and within the footprint of the enlarged reservoir would be used to construct the new dam with excess material spoiled directly downstream of the new dam (Figure 2-2). The proposed earth dam would have a maximum height of 90 feet from its downstream toe and a crest elevation of 2,932 feet amsl. The normal maximum water surface elevation for the new expanded reservoir would remain at 2,925 feet amsl with an operational storage capacity of 225 af. The maximum water surface area at maximum elevation would increase to approximately 15 acres.

2.4.4 Operation and Maintenance Facilities

Access to the enlarged Crafton Hills Reservoir would be from the existing access road off of Mill Creek Road to the existing dam. A maintenance road would be constructed from the existing dam to the new dam and to the downstream toe of the spoil pile in a configuration similar to that shown in Figure 2-2, but this road would not be used to connect to roadways south of the spoil area. The project would also include construction of another new maintenance road that would connect an existing maintenance road south of the existing dam to the existing access road at the crest of the existing dam (Figure 2-2). Maintenance of the reservoir would be similar to existing conditions, occurring approximately once a week. Otherwise, the facility would be unmanned, as it is currently. The proposed connector pipeline would be located underground and would be serviced on an as-needed basis. The proposed pipeline would remain in place following completion of the proposed reservoir enlargement project and would provide operational flexibility to the system.



SOURCE: GlobeXplorer, 2007; DWR, 2007.

DWR - Crafton Reservoir . 206008.04

Figure 2-2
Project Location Map

2.5 Project Construction

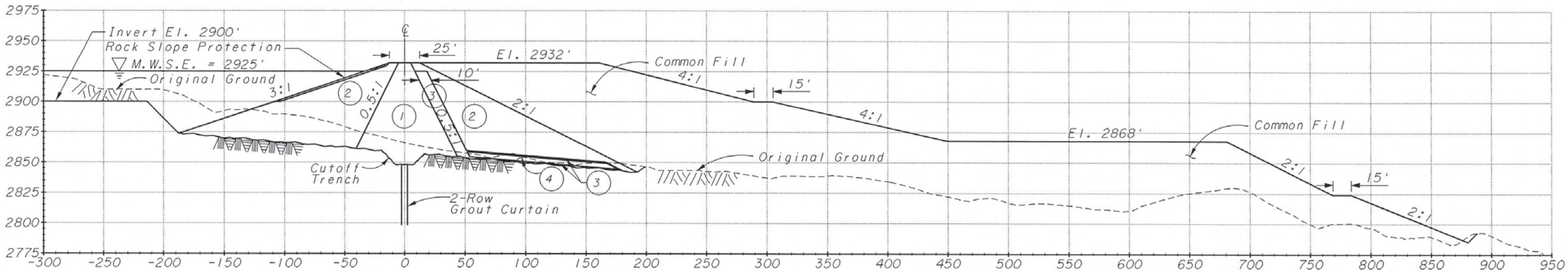
2.5.1 Crafton Hills Reservoir Enlargement

Construction of the Crafton Hills Reservoir enlargement would include the following activities:

- Clearing and grubbing of the construction area;
- Excavation of the embankment foundation and reservoir impoundment area;
- Installation of a grout curtain beneath the cutoff trench;
- Construction of an earth dam, road embankments, and other miscellaneous embankments;
- Concrete work, including construction of a seepage collection vault, modifications to the existing seepage collection system, and appurtenant structures;
- Installation of piping and appurtenant structures;
- Finish work on the embankment and reservoir, including access facilities, fencing, final grading, cleaning, and revegetation of disturbed areas above the maximum water surface elevation; and
- Construction of two new maintenance roads from the crest of the existing dam to: (1) the new dam and the downstream toe of the spoil pile, and (2) the existing maintenance road south of the existing dam.

A total of 400,000 cubic yards (cy) of material would be excavated from the project area. Of this total, approximately 350,000 cy would be excavated to create the reservoir enlargement area itself, 40,000 cy would be excavated for the earth dam foundation, and 10,000 cy would be excavated to form the maintenance roads. Approximately 50,000 cy would be used for the core material (zone 1) of the proposed dam and 100,000 cy would be used for the transition and shell materials (zone 2) of the dam. The remaining 250,000 cy of material would be spoiled downstream of the proposed dam, filling the ravine below the dam with a series of terraces. The spoil area would be reseeded with native vegetation approved by the Division of Safety of Dams (DSOD). **Figure 2-3** shows a cross-section of the proposed reservoir enlargement area, dam, and spoil area. Construction of the reservoir would include a grout curtain installed beneath the cutoff trench.

Embankment materials not available from the excavation would be primarily obtained from off-site. Approximately 3,400 tons of rock slope protection would be imported to provide protection from wave action and water surface elevation cycling during operation. In addition to the rock slope protection, approximately 22,000 tons of sand and gravel would be imported for the chimney filter and 13,000 tons of soil and gravel would be imported for the blanket drain. The sand and gravel would provide a medium for seepage water to pass through the chimney filter. Furthermore, approximately 5,000 tons of gravel for the drain material would be imported to provide a path for seepage water to drain. Imported materials would be stored onsite at staging areas designated in Figure 2-2.



NOTES

1. Embankment zones are as follows:
   Zone 1 - Core (Sandy Clays and Silts)
   Zone 2 - Transition and Shell (Weathered Bedrock)
   Zone 3 - Filter (Imported Sand and Gravel)
   Zone 4 - Drain (Imported Gravel)

50 0 50 100 150 200
SCALE OF FEET

SOURCE: DWR, 2008.

DWR - Crafton Reservoir . 206008.04

Figure 2-3
New Dam and Embankment Facilities, Cross Section

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A sufficient amount of impervious material may not be available from within the reservoir enlargement area. Additional zone-1 material may be excavated from a 1.8-acre site within the Crafton Hills that was the material source for the existing dam, located at the northwest end of the existing reservoir (Figure 2-2). In addition, a 3.6-acre supplemental borrow area west of the East Branch Extension pipeline about a quarter mile north of the reservoir (Figure 2-2) also could be used as a impervious borrow source, if necessary. DWR would acquire a borrow easement.

One construction crew of 30 employees is anticipated for each of the project components (pipeline and reservoir). Construction of the reservoir is expected to take approximately 12 to 18 months; construction equipment is described below in **Table 2-1**. Access to the site would occur from the north along the existing reservoir access road. Deliveries of materials and truck trips would use either Yucaipa Boulevard/Oak Glen Road via Bryant Street or Mentone Boulevard to access Interstate 10. A portion of the access road that was created for preliminary geological exploration would be retained as part of the permanent maintenance road that would run south from existing dam along the edge of the reservoir enlargement area to the proposed dam and to the downstream toe of the spoil area (Figure 2-2). This road would be used for site access during construction of the reservoir enlargement area.

TABLE 2-1
CONSTRUCTION EQUIPMENT ESTIMATES

Equipment	Pipeline Alignment	Crafton Hills Reservoir Enlargement
10-wheel Dump Truck	2	4
Backhoe	2	2
Bulldozer	1	2
Compactor	1	3
Concrete Truck	1	1
Crane	1	0
Earth Mover	1	0
Excavator	2	2
Flat Bed Truck	5	5
Front-end Loader	2	2
Jack hammer	1	0
Pavement Saw	1	0
Paver	1	0
Road Grader	1	2
Scraper	1	4
Side Boom Pipe Handler Tractor	1	0
Sweeper	1	0
Trench Shield	1	0
Water Truck	1	2
Welding Truck	2	0

2.5.2 Connector Pipeline

The pipeline would be constructed using trench excavation and installation techniques, and would generally include the following activities:

- Grubbing and clearing of an approximately 100 – 150 foot wide permanent and construction easements;
- Excavation to a depth varying from 15 to 25 feet;
- Stockpiling of excavated soil and rocks;
- Pipeline staging and placement in the trench;
- Connection of pipeline segments and placement of engineered backfill in the lower portion of the trench covering the pipeline;
- Construction of vaults;
- Backfill of remaining trench to original surface elevation with excavated materials;
- Final alignment grading; and
- Site restoration.

Trenching would utilize a conventional cut and cover construction technique. The trenching technique would include saw cutting of the pavement where applicable, trench excavation, trench shoring, pipe installation, backfill operations, and re-surfacing to the original condition. The trench would typically be 15 to 25 feet deep and approximately 32 to 58 feet wide. The pipeline alignment would require a minimum cover of five feet. The total width of easements required for construction would be between 100 and 150 feet. Dewatering is not anticipated during construction of the pipeline alignment.

Excavated material during pipeline construction would be temporarily stockpiled adjacent to the trench. Excavated materials would be used for backfill. Approximately 300 cy of concrete and 400 cy of bedding would be imported for backfill. Imported material would be stored at designated staging areas. Excess excavated material would be spread over the construction area and oversized rocks may be disposed of off-site.

Installation of the pipeline alignment is expected to proceed at a rate of approximately 120 feet per day. The pipeline would be constructed by one crew totaling up to approximately 30 employees over the course of a six to 12 month construction period. Construction equipment anticipated for construction of the pipeline is described in Table 2-1. Complete road closures due to construction are not anticipated, although a detour and temporary lane closures at the construction area during the pipeline installation across Mill Creek Road may be necessary for approximately two to four weeks.

2.5.3 Construction Staging Areas

Staging areas would be required to store pipe, construction equipment, imported fill material, and other construction related items. Staging areas would be established in areas near construction zones that are open and easily accessed. Four potential staging areas for the proposed project have

been identified (Figure 2-2). The first is located between the existing pipeline and Mill Creek Road and is approximately 100 feet by 200 feet. The second is located between the proposed pipeline and Mill Creek Road and is approximately 100 feet by 100 feet. The third is located midway along the existing reservoir access road and is bisected by the road. The 1.25-acre portion west of the road is both a staging area and a supplemental borrow area, while the 1-acre portion east of the road would be a load restricted staging area due to the underlying pipeline. The fourth is an approximately 2.5-acre staging and supplemental borrow area located along the northwest end of the reservoir. Figure 2-2 shows the locations of these staging areas.

2.5.4 Construction Schedule

Construction activities for the proposed project are scheduled to be completed over an 18 month time frame. The pipeline construction is anticipated to require six to 12 months to complete. The reservoir enlargement is expected to take approximately 12 to 18 months. The pipeline alignment construction is anticipated to begin in late 2009 and be completed in late 2010. Reservoir enlargement construction is anticipated to begin in early 2010 and be completed by mid 2011. Construction of the pipeline alignment would begin first to allow for water deliveries while the reservoir is being enlarged. Nighttime construction is not anticipated.

2.6 Intended Uses of the SEIR / Project Approval

DWR intends to use this SEIR to consider implementation of the East Branch Extension – Phase I Improvements project. As Lead Agency, DWR may use this SEIR to approve the proposed project, make Findings regarding identified impacts, and if necessary, adopt a Statement of Overriding Considerations regarding these impacts. The SGPWA and SBVMWD also have discretionary authority over the proposed project, and are therefore Responsible Agencies.

DWR would use the analysis contained in this SEIR to support the acquisition of the following regulatory permits or approvals:

Agency	Action
United States Army Corps of Engineers (Corps)	Clean Water Act Section 404 permit
Regional Water Quality Control Board (RWQCB)	Waste Discharge Requirements (WDRs)
	Storm Water Pollution Prevention Plan (SWPPP)
	Clean Water Act Section 401 Water Quality Certification
California Department of Fish and Game (CDFG)	1602 Streambed Alteration Agreement
California Department of Water Resources' Division of Safety of Dams (DSoD)	Approval
California Department of Transportation (Caltrans)	Construction Easement

CHAPTER 3
Environmental Setting, Impacts, and Mitigation Measures

In compliance with Section 15126 of the *California Environmental Quality Act (CEQA*) *Guidelines*, **Chapter 3** provides an analysis of the environmental effects of the Crafton Hills Reservoir Enlargement Project (proposed project) with respect to existing conditions at the time the Notice of Preparation (NOP) was published (Appendix A). The following areas of environmental concern are assessed in this chapter:

- Aesthetics;
- Air Quality;
- Biological Resources;
- Cultural Resources;
- Geology, Soils, and Seismicity;
- Hazards and Hazardous Materials;
- Hydrology and Water Quality;
- Land Use, Agriculture and Recreation;
- Noise;
- Transportation and Traffic;
- Utilities, Energy, and Service Systems.

Each environmental issue area includes the following subsections:

- Regulatory Framework;
- Environmental Setting;
- Impact Assessment.

The proposed project would have no impact to the following environmental resources, as described in the Initial Study (see Appendix B). Further evaluation was determined to be unnecessary. Therefore, these environmental resources are not included in this chapter:

- Mineral Resources
- Population and Housing.

Previous Documentation

As explained in Chapter 1, Section 1.2.5, this SEIR is Supplement No. 2 to the 1994 WIP EIR. The proposed Crafton Hills Reservoir Enlargement Project is subject to the mitigation measures previously adopted by DWR as part of the 1994 WIP EIR and the 1998 EBX SEIR. When appropriate and applicable, mitigation measures from these previous documents are identified in Chapter 3 and Chapter 4 to mitigate impacts associated with the proposed project. Additional mitigation measures are included when necessary.

3.1 Aesthetics

This chapter addresses the aesthetic and visual quality of the region and local project area. It includes a description of existing visual conditions and an evaluation of potential effects on visual resources and public viewing corridors.

3.1.1 Regulatory Framework

State

State Scenic Highway Program

The State Scenic Highway Program, created by the California Legislature in 1963, was established to preserve and protect scenic highway corridors from change that would diminish the aesthetic value of lands adjacent to highways. A highway is designated under this program when a local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the highway has been designated as a Scenic Highway. When a city or county nominates an eligible scenic highway for official designation, it defines the scenic corridor, which is land generally adjacent to and visible to a motorist on the highway. Although there are several eligible state scenic highways in San Bernardino County, only one is officially designated at this time: a portion of SR-38 within the San Bernardino Mountains. Mill Creek Road becomes SR-38 as it crosses the San Bernardino Mountains east of the proposed connector pipeline project area. SR-38 is approximately 49 miles long, starting in the community of Mentone and ending at Big Bear City, the final 16 miles of which are an officially designated state scenic highway. The specific portion of SR-38 designated as a State Scenic Highway is located well outside of the proposed project area.

Local

City of Yucaipa

The proposed reservoir enlargement would occur within the jurisdictional boundary of the City of Yucaipa. The City's General Plan Transportation Element identifies several roadways as existing or potential scenic roadways. The two roadways currently designated as scenic are:

- Live Oak Canyon Road, southwest of the 10 Freeway; and
- Wildwood Canyon Road, east of Fremont Street.

The roadways proposed for designation are:

- Yucaipa Boulevard;
- Bryant Street;
- Oak Glen Road; and
- Wildwood Canyon Road, west of Fremont Street.

The proposed project is located nearest to Bryant Street. The Crafton Hills are visible from Bryant Street.

City of Redlands

A portion of the proposed connector pipeline would occur within the jurisdictional boundary of the City of Redlands. The City's General Plan Circulation Element identifies several scenic highways, drives, and historic streets within the City. These roadways are as follows:

- Brookside Avenue, from Lakeside Avenue to Eureka Street
- Olive Avenue, From Lakeside Avenue to Cajon Street
- Center Street, from Brookside Avenue to Crescent Avenue
- Highland Avenue, from Serpentine Drive to Cajon Street
- Sunset Drive, from Serpentine Drive to Edgemont Drive
- Cajon Street
- Mariposa Rive, between Halsey Street and Sunset Drive
- Dwight Street, between Pepper Street and Mariposa Drive

None of the City of Redlands designated streets have views of the proposed project area.

San Bernardino County

A portion of the proposed connector pipeline would occur within the unincorporated County of San Bernardino. The County of San Bernardino has designated various "Scenic Routes" within the County. The county General Plan designates Scenic Routes as roadways that have scenic vistas and other scenic and aesthetic qualities that over time have been found to add beauty to the County. The following routes have been designated as scenic within the Valley Region (nearest the project site) of the County.

Valley Region:

- Citrus Avenue within the Redlands sphere of influence (SOI).
- Colton Avenue within the Redlands SOI.
- Crafton Avenue within the Redlands SOI.
- Fifth Avenue within the Redlands SOI.
- Highland Avenue within the Redlands SOI.
- I-10 from the City of Redlands to the City of Yucaipa.
- Mentone Boulevard within the Redlands SOI.
- San Bernardino Avenue within the Redlands SOI.
- Sand Canyon Road between Crafton Avenue and the City of Yucaipa.

None of the County designated scenic routes have views of the proposed project area.

3.1.2 Setting

Regional Setting

San Bernardino County is divided into three distinct regions: the valley, the mountains, and the high desert regions. The proposed project would take place within the valley region, within and near the Crafton Hills and the City of Yucaipa. The visual character of the project vicinity is shaped by the juxtaposition of the urbanized and rural development in the valley with the Santa Ana River Wash and its tributaries and the steep slopes of the San Bernardino Mountains

and Crafton Hills. While the valley is mostly urban, the communities of Redlands and Yucaipa retain a rural character by the intermixing of residential, commercial, agricultural, and open space land use designations.

Prominent natural features that can be seen from the project vicinity include the San Bernardino Mountains and the Crafton Hills. Built features in the project vicinity include residential housing and commercial buildings.

Project Area Setting

The proposed reservoir enlargement would be located in the Crafton Hills. The Crafton Hills are generally undeveloped and consist of chamise chaparral vegetation on steep hill slopes. The proposed connector pipeline would occur adjacent to SR-38, within the boulder-dominated Mill Creek wash. The current site is flat and covered with Riversidean alluvial fan sage scrub vegetation. (For additional information about vegetation and habitat in the proposed project area, see **Chapter 3.3, Biological Resources**.)

Public Vantage Points

The proposed project is located in and around the Crafton Hills; the Crafton Hills are visible from various public vantage points throughout the City of Yucaipa. To illustrate the visual character of the proposed project area, typical views of the project site from publicly-accessible vantage points are shown on the following pages. **Figure 3.1-1** shows the location of some public vantage points, and **Figure 3.1-2** through **Figure 3.1-6** show views from these public vantage points.

3.1.3 Impact Assessment

The proposed project's potential impacts were assessed using the *CEQA Guidelines* Appendix G Checklist. The following sections discuss the key issue areas identified in the *CEQA Guidelines* with respect to the project's potential effect to aesthetic resources. Significance thresholds are identified and a significance conclusion is made following the discussion.

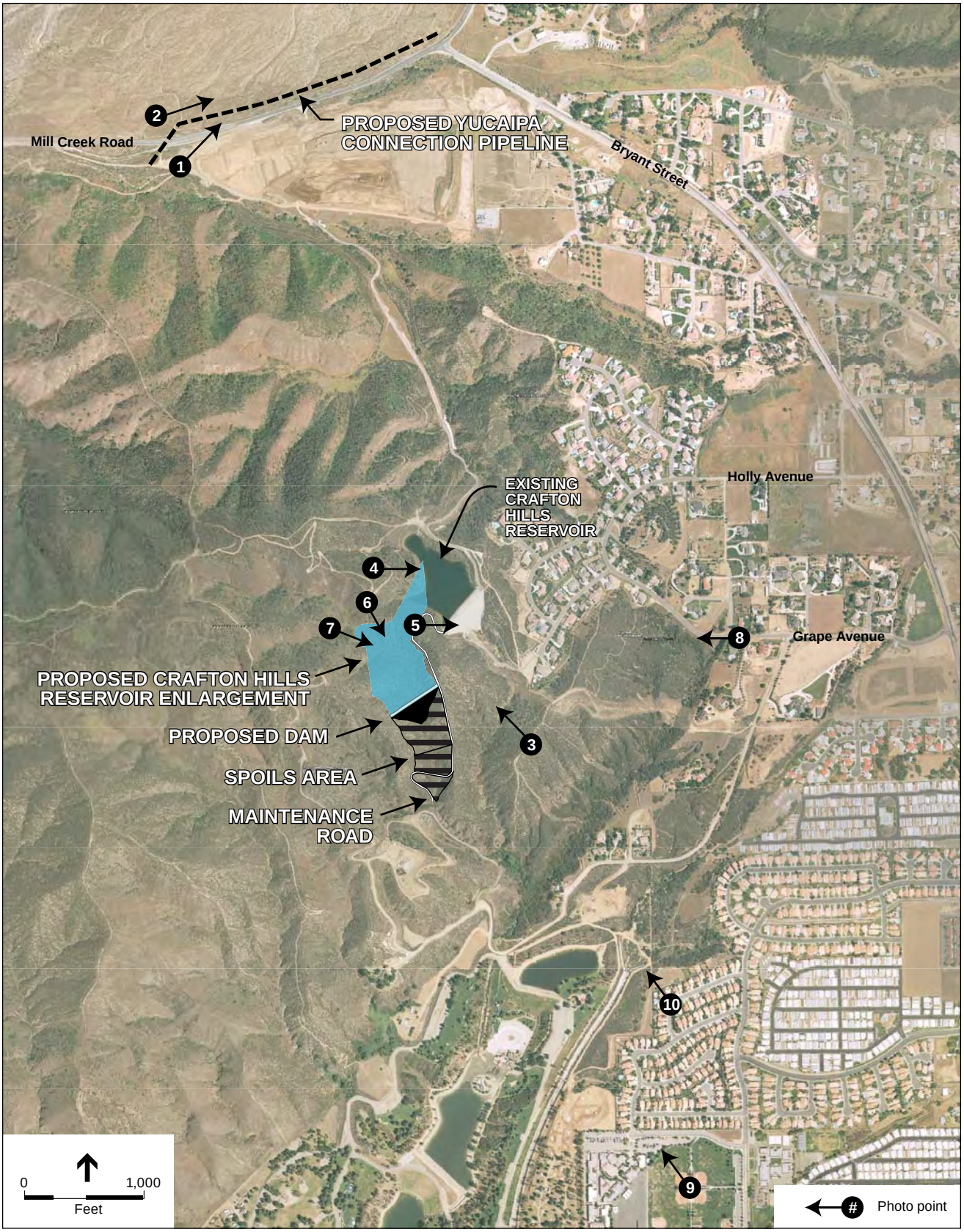
Scenic Vistas

This section discusses the following CEQA Checklist question:

> *Would the project have a substantial adverse effect on a scenic vista?*

Significance Threshold

The proposed project would have a significant impact if it would result in substantial adverse impacts on scenic vistas. For the purposes of this analysis, a scenic vista is visible from either a locally-designated scenic roadway, a Caltrans designated Scenic Highway, or a publicly-accessible vantage point. Additionally, this analysis defines a substantial adverse effect as an effect that results in a high degree of visual contrast with the existing objects and patterns on the site. A substantial adverse effect also could result from physical changes that may impair the



SOURCE: GlobeXplorer, 2007; ESA, 2007.

DWR - Crafton Reservoir . 206008.04

Figure 3.1-1
Key Vantage Point Reference Map

Photo 1: View northeast across SR-38 toward connector pipeline route.

Photo 2: View northeast along proposed pipeline connector route.

SOURCE: ESA, 2007

Figure 3.1-2
Site Photos

Photo 3: View looking northwest from the Grape Avenue hiking trail.

Photo 4: View from Grape Avenue hiking trail looking southeast across the existing reservoir.

SOURCE: ESA, 2007

DWR - Crafton Reservoir . 206008.04

Figure 3.1-3
Site Photos

Photo 5: View from hiking trail looking east across the existing dam.

Photo 6: View looking southeast along the ridge that will be excavated to connect the two adjacent drainages to create one reservoir.

DWR - Crafton Reservoir . 206008.04

SOURCE: ESA, 2007

Figure 3.1-4
Site Photos

Photo 7: Looking south down the drainage proposed to be inundated.

Photo 8: View looking west at the Crafton Hills from the western edge of Bryant Street.

SOURCE: ESA, 2007

DWR - Crafton Reservoir . 206008.04

Figure 3.1-5
Site Photos

Photo 9: View looking northwest at the Crafton Hills from City Ball Fields.

Photo 10: View looking northwest towards the Crafton Hills from the corner of Spring Glen Drive and Heatherview Drive.

DWR - Crafton Reservoir . 206008.04

SOURCE: ESA, 2007

Figure 3.1-6
Site Photos

quality of important views, including changes in scale, form, color and texture of natural features existing on the site. Such changes could result from new structures, grading and excavation, landscaping, or elimination of existing vegetation.

Impact Analysis

As described above, a portion of SR-38 is an officially-designated Scenic Highway under the State Scenic Highway Program within portions of the San Bernardino National Forest. The Cities of Redlands, Yucaipa, and San Bernardino County have several designated scenic routes in the area as well. The proposed project, however, would not be visible from the segment of SR-38 that is officially designated as a Scenic Highway under the State Scenic Highway Program. As such there would be no impact to a scenic vista from a state designated scenic route.

The proposed connector pipeline would be located below ground. Therefore, it would not be visible as part of any scenic vista in the area, and this project element would not have an impact on a scenic vista.

The existing Crafton Reservoir Dam is not visible from public vistas due to the surrounding hills. The Crafton Hills are visible from Bryant Street, which is proposed for designation by the City of Yucaipa as a scenic route. It is likely that certain viewing angles along this eligible scenic route would afford views of the proposed dam and spoil area, which could result in a significant impact to scenic vistas. The dam and spoil area would change the physical form, texture, and topography of the site as viewed from Bryant Street. However, as vehicles move along Bryant Street, a viewer's perspective would change, and the topography of the Crafton Hills could shield the proposed dam and spoil area from view. Nonetheless, impacts to the scenic vista from the city-eligible scenic route would be a significant impact.

The Crafton Hills are visible from various public vantage points throughout the City of Yucaipa. The site for the new dam and spoil area are visible from some public vantage points, such as the City Ball Fields (see Figure 3.1-6, Photo 9), residential neighborhoods (see Figure 3.1-6, Photo 10), and the hiking trails accessible from Grape Avenue (see Figures 3.1-3 and 3.1-4).

Once the proposed enlargement is complete, views of the dam and spoil areas would be visible from several public vantage points. **Figure 3.1-7**, **Figure 3.1-8**, and **Figure 3.1-9** represent visual simulations prepared to show how the proposed reservoir enlargement would affect existing views of the Crafton Hills. The visual simulations were created by using ESRI ArcGIS Spatial Analyst, Autodesk Viz, and Adobe Photoshop computer software programs. A three-dimension computer model of existing topography was created using USGS 10-meter Digital Elevation Model (DEM) data. A Global Positioning System (GPS) location was taken at each site photo location to get the real camera focal length. Based on DWR engineering drawings, a triangulated irregular network (TIN) model was built to reflect the proposed reservoir excavation, cut slopes, and spoil areas. The TIN model was then matched to the viewpoint photography using the same positional and camera parameters used for the site photos. The model results were then superimposed on the site photos.

Simulation of proposed reservoir enlargement: northwest view from Grape Avenue hiking trail.

Existing conditions: northwest view from Grape Avenue hiking trail.

SOURCE: ESA, 2007

DWR - Crafton Reservoir . 206008.04

Figure 3.1-7
Visual Simulation - Photo 3
Grape Avenue Trail

Simulation of proposed reservoir enlargement: northwest view from City Ball Fields.

Existing conditions: northwest view from City Ball Fields.

SOURCE: ESA, 2007

DWR - Crafton Reservoir . 206008.04

Figure 3.1-8
Visual Simulation - Photo 9
City Ball Fields

Simulation of proposed reservoir enlargement: northwest view from corner of Spring Glen Drive and Heatherview Drive.

Existing conditions: northwest view from corner of Spring Glen Drive and Heatherview Drive.

SOURCE: ESA, 2007

DWR - Crafton Reservoir . 206008.04

Figure 3.1-9
Visual Simulation - Photo 10
Residential Yucaipa

As shown in these visual simulations, the spoil area, maintenance road, top of the dam, and bedrock exposed cut slopes would be visible from the City ball fields, residential neighborhoods, and public hiking trails. Impacts to the scenic vistas from public vantage points would be a significant impact.

Implementation of Mitigation Measures AES-1, AES-2, and AES-3, as described below, would reduce the effects of the proposed project to scenic vistas by requiring revegetation of the areas affected by the proposed project, such as the spoil area and borrow areas in the Crafton Hills. The DWR Division of Safety of Dams (DSOD) may require that the spoil area be revegetated only with grasses. However, even with mitigation, the proposed project would have a permanent affect on scenic vistas in the project area due to changes to physical form, texture, and topography of the site that result from the new dam and spoil area. (See Figures 3.1-7, 3.1-8, and 3.1-9.) Impacts to scenic vistas would be considered significant and unavoidable.

Mitigation Measures

The following mitigation measures were included in the previous 1994 WIP EIR and the 1998 EBX SEIR as AS-1, AS-2, and AS-8, and are applicable to the proposed project. Other mitigation measures also were included in the 1994 WIP EIR and 1998 EBX SEIR that are not applicable to the proposed project. No additional mitigation measures are required or are feasible beyond what was previously required. Any modifications to the previous measures have been underlined.

AES-1 (Previously AS-1): Conceptual landscape guidelines shall be established by DWR during preparation of final construction plans for plantings designated in areas to be revegetated or screened from view. These guidelines shall be prepared to illustrate all plant materials, sizes, species, and quantities, and irrigation and preservation techniques. There shall be a variety of landscape types addressed including revegetating graded slopes and earthen berms. Roads and trail cuts shall be vegetated with natural grasses, shrubs and trees to blend with the adjacent landscape character.

AES-2 (Adapted from AS-2): DWR shall ensure that plantings shall be integrated with earthen berms and cut slopes as soon as possible to screen undesirable views. For these situations, the landscape design guidelines shall include grading guidelines. Grading guidelines shall address issues such as the area where berms are recommended, the sizes of such berms and recommended slope gradients to minimize soil erosion.

AES-3 (Adapted from AS-8): Following reservoir construction, DWR shall revegetate the area of disturbance with plants native to the Crafton Hills. <u>The spoil area downstream of the dam shall be revegetated with plants approved by DSOD. Restoration of disturbed areas shall be limited to areas above the water surface of the reservoir.</u>

Significance Conclusion

Significant and unavoidable. Even with the implementation of the Mitigation Measures AES-1, AES-2, and AES-3, which would soften the views of the spoil area and dam by requiring revegetation with grasses, the proposed project would result in a physical change to the scenic vistas of the Crafton Hills as viewed from public vantage points.

Scenic Resources within a State Scenic Highway Viewshed

This section discusses the following CEQA Checklist question:

> *Would the project substantially damage scenic resources, including, but not limited to: trees, rock outcroppings, and historic buildings within a state scenic highway?*

Significance Threshold

The proposed project would have a significant impact if it resulted in the removal of or damage to scenic resources such as trees, rock outcroppings, and historic buildings within a state scenic highway corridor, which is defined by Caltrans as the land generally adjacent to and visible by motorists from a scenic highway.

Impact Analysis

There are no state-designated scenic highways in the project area. Therefore, there are no scenic highway corridors or viewsheds in the project area. No scenic resources within a state scenic highway corridor would be affected by the proposed project. There would be no impact.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed reservoir enlargement area and connector pipeline are not visible from a state scenic highway.

Visual Character

This section discusses the following CEQA Checklist question:

> *Would the project substantially degrade the existing visual character or quality of the site and its surroundings?*

Significance Threshold

A significant impact would result if the proposed project were to substantially degrade the visual quality and character of the site and its surroundings. For the purpose of this analysis, the existing visual character of the project site would be significantly impacted if the proposed project resulted in a high degree of visual contrast with the existing objects and patterns on the site. A substantial adverse effect also could result from physical changes, including changes in scale, form, color and texture of natural features existing on the site. Such changes could result from new structures, grading and excavation, landscaping, or elimination of existing vegetation.

Impact Analysis

Connector Pipeline

Construction activities associated with the connector pipeline would degrade the visual character of the alignment corridor due to the presence of construction equipment. However, construction activities would last for only six to 12 months, and therefore construction-related impacts to visual character are not considered a significant long-term aesthetic impact.

With the exception of minor appurtenant facilities such as in-line valve vaults, blow-off valves and pipeline access vaults, the completed connector pipeline alignment would be located entirely underground and would not be readily visible from existing vantage points once completed. In addition, the associated appurtenant facilities would be screened from view upon reestablishment of vegetation along the pipeline route. The visual character of the proposed connector pipeline project area would not be significantly affected.

Reservoir

Construction activities would degrade the visual character of the enlargement area by introducing construction equipment into an otherwise undeveloped and open space area. However, these activities would only last for twelve to 18 months and therefore would not be considered a significant long-term aesthetic impact.

The proposed reservoir enlargement would permanently affect the visual character of the project site, as viewed from existing hiking trails located within the Crafton Hills. Figure 3.1-3 and Figure 3.1-4 include views of the existing reservoir and the portion of the enlargement area that would be seen from hiking trails. The proposed reservoir enlargement would approximately double the surface area of the existing reservoir by expanding into the adjacent drainage, which is currently characterized by native vegetation and topography of the Crafton Hills. The proposed borrow areas would be permanently impacted, if utilized, due to excavation of material. With implementation of Mitigation Measures AES-1, AES-2, and AES-3, the proposed maintenance road, borrow areas, staging areas, dam, and spoils area would be revegetated to blend in with the surrounding landscape. Nonetheless, the proposed project would result in permanent impacts to the physical form, color, and texture of the natural features in the reservoir enlargement area and potentially the borrow areas. Even with implementation of mitigation, the impacts to the visual character of the proposed project area would be significant and unavoidable.

Mitigation Measures

Implementation of AES-1, AES-2, and AES-3.

Significance Conclusion

Significant and unavoidable. Even with implementation of Mitigation Measures AES-1, AES-2, and AES-3, which would soften the changes to the natural features in the project area, the proposed project would result in permanent changes to the visual character of the Crafton Hills.

Light and Glare

This section discusses the following CEQA Checklist question:

> *Would the project create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?*

Significance Threshold

A significant impact would result if the proposed project resulted in new sources of light and or glare that would affect the existing day or nighttime visual character in the project vicinity.

Impact Analysis

Reservoir and Pipeline

The proposed reservoir enlargement and connector pipeline does not include service or emergency lighting or use of any reflective material. There would be no impact to day or nighttime views.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed reservoir enlargement and connector pipeline does not include service or emergency lighting or use of any reflective material.

3.1.4 Mitigation Measure Summary Table

Table 3.1-1 presents the impacts and mitigation summary for Aesthetic Resources.

TABLE 3.1-1
AESTHETICS IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance After Mitigation
Scenic Vistas: The proposed project would significantly affect the scenic vistas visible from public vantage points with incorporation of mitigation measures.	AES-1, AES-2, and AES-3	Significant and unavoidable
Scenic Resources: The proposed project would not impact scenic resources within a state designated scenic highway.	None required	No impact
Visual Character: The proposed project would significantly affect the visual character of the project areas with incorporation of mitigation measures.	AES-1, AES-2, and AES-3	Significant and unavoidable
Light and Glare: The proposed project would have no light or glare impacts.	None required	No impact

SOURCE: ESA, 2008

3.2 Air Quality

This chapter provides an overview of the regulatory framework, existing air quality at the proposed project site and surrounding region, an analysis of potential impacts to air quality that would result from implementation of the proposed project, and identification of mitigation measures.

3.2.1 Regulatory Framework

Federal

The federal Clean Air Act (FCAA) is administered by the U.S. Environmental Protection Agency (USEPA). The FCAA requires the USEPA to identify National Ambient Air Quality Standards (NAAQS or national standards) to protect public health and welfare. National standards have been established for the following six principal pollutants, which are called "criteria" pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_x), sulfur dioxide (SO_2), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead. **Table 3.2-1** shows current national and state ambient air quality standards and provides a brief discussion of the related health effects and principal sources for each pollutant.

Pursuant to the 1990 federal Clean Air Act Amendments (FCAAA), the USEPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for criteria air pollutants, based on whether or not the NAAQS have been achieved. **Table 3.2-2** shows the current attainment status of the project area.

The FCAA requires each state to prepare an air quality control plan referred to as the State Implementation Plan (SIP). States containing areas that violate the NAAQS are required to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The USEPA has responsibility to review all state SIPs to determine if they conform to the mandates of the FCAAA and will achieve air quality goals when implemented. If the USEPA determines a SIP to be inadequate, it may prepare a Federal Implementation Plan (FIP) for the nonattainment area and may impose additional control measures. Failure to submit an approvable SIP or to implement the plan within mandated timeframes can result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

Criteria Air Pollutants

The following is a discussion of air pollutants regulated in the FCAA.

Ozone

Short-term exposure to ozone can irritate the eyes and cause construction of the airways. Besides causing shortness of breath, ozone can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

TABLE 3.2-1
STATE AND NATIONAL CRITERIA AIR POLLUTANT STANDARDS, EFFECTS, AND SOURCES

Pollutant	Averaging Time	State Standard	National Standard	Pollutant Health and Atmospheric Effects	Major Pollutant Sources
Ozone	1 hour 8 hours	0.09 ppm 0.07 ppm[1]	--- 0.08 ppm	High concentrations can directly affect lungs, causing irritation. Long-term exposure may cause damage to lung tissue.	Formed when reactive organic gases (ROG) and nitrogen oxides (NO_X) react in the presence of sunlight. Major sources include on-road motor vehicles, solvent evaporation, and commercial / industrial mobile equipment.
Carbon Monoxide	1 hour 8 hours	20 ppm 9.0 ppm	35 ppm 9 ppm	Classified as a chemical asphyxiant, carbon monoxide interferes with the transfer of fresh oxygen to the blood and deprives sensitive tissues of oxygen.	Internal combustion engines, primarily gasoline-powered motor vehicles.
Nitrogen Dioxide	1 hour Annual Avg.	0.18 ppm 0.030 ppm	--- 0.053 ppm	Irritating to eyes and respiratory tract. Colors atmosphere reddish-brown.	Motor vehicles, petroleum refining operations, industrial sources, aircraft, ships, and railroads.
Sulfur Dioxide	1 hour 3 hours 24 hours Annual Avg.	0.25 ppm --- 0.04 ppm ---	--- 0.5 ppm 0.14 ppm 0.03 ppm	Irritates upper respiratory tract; injurious to lung tissue. Can yellow the leaves of plants, destructive to marble, iron, and steel. Limits visibility and reduces sunlight.	Fuel combustion, chemical plants, sulfur recovery plants, and metal processing.
Respirable Particulate Matter (PM-10)	24 hours Annual Avg.	50 µg/m^3 20 µg/m^3	150 µg/m^3 ---	May irritate eyes and respiratory tract, decreases in lung capacity, cancer and increased mortality. Produces haze and limits visibility.	Dust and fume-producing industrial and agricultural operations, combustion, atmospheric photochemical reactions, and natural activities (e.g., wind-raised dust and ocean sprays).
Fine Particulate Matter (PM-2.5)	24 hours Annual Avg.	--- 12 µg/m^3	35 µg/m^3 15 µg/m^3	Increases respiratory disease, lung damage, cancer, and premature death. Reduces visibility and results in surface soiling.	Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning; Also, formed from photochemical reactions of other pollutants, including NO_X, sulfur oxides, and organics.
Lead	Monthly Ave. Quarterly	1.5 µg/m^3 ---	--- 1.5 µg/m^3	Disturbs gastrointestinal system, and causes anemia, kidney disease, and neuromuscular and neurological dysfunction.	Present source: lead smelters, battery manufacturing & recycling facilities. Past source: combustion of leaded gasoline.
Hydrogen Sulfide	1 hour	0.03 ppm	No National Standard	Geothermal Power Plants, Petroleum Production and refining	Nuisance odor (rotten egg smell), headache and breathing difficulties (higher concentrations)
Sulfates	24 hour	25 µg/m^3	No National Standard	Produced by the reaction in the air of SO2.	Breathing difficulties, aggravates asthma, reduced visibility
Visibility Reducing Particles	8 hour	Extinction of 0.23/km; visibility of 10 miles or more	No National Standard	Reduces visibility, reduced airport safety, lower real estate value, and discourages tourism.	See $PM_{2.5}$

ppm = parts per million; µg/m^3 = micrograms per cubic meter.

SOURCES: California Air Resources Board, 2007a. *Ambient Air Quality Standards,* available at http://www.arb.ca.gov/aqs/aaqs2.pdf, June 26, 2008; California Air Resources Board, 2005. *ARB Fact Sheet: Air Pollution Sources, Effects and Control,* http://www.arb.ca.gov/research/health/fs/fs2/fs2.htm, page last updated December 2005.

TABLE 3.2-2
SAN BERNARDINO ATTAINMENT STATUS

Pollutant	Designation/Classification	
	Federal Standards	State Standards
Ozone – one hour	No Federal Standard[a]	Nonattainment
Ozone – eight hour	Severe -17	Unclassified
PM_{10}	Serious	Nonattainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Maintenance/Attainment	Attainment
Nitrogen Dioxide	Unclassified/Attainment	Attainment
Sulfur Dioxide	Attainment	Attainment
Lead	No Designation	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility-Reducing Particles	No Federal Standard	Unclassified

[a] Federal One Hour Ozone National Ambient Air Quality Standard was revoked on June 15, 2005
Note: Nonattainment- any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Attainment- areas that meets the national primary or secondary ambient air quality standard for the pollutant.

Unclassified- any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

Levels of Nonattainment in descending order: Extreme, Severe 17, Severe 15, Serious, Moderate, Marginal

SOURCE: California Air Resources Board, 2007b. *Area Designation Maps,* http://www.arb.ca.gov/desig/adm/adm.htm, page updated June 28, 2007.

Ozone, the main component of photochemical smog, is primarily a summer and fall pollution problem. Ozone is not emitted directly into the air but is formed through a complex series of chemical reactions involving other compounds that are directly emitted. These directly emitted pollutants (also known as ozone precursors) include ROG and NO_x. The time period required for ozone formation allows the reacting compounds to spread over a large area, producing a regional pollution problem. Ozone problems are the cumulative result of regional development patterns rather than the result of a few significant emission sources.

Once formed, ozone remains in the atmosphere for one or two days. Ozone is then eliminated through reaction with chemicals on the leaves of plants, attachment to water droplets as they fall to earth ("rainout") and absorption by water molecules in clouds that later fall to earth with rain ("washout").

Carbon Monoxide

Ambient carbon monoxide concentrations normally are considered a local effect and typically correspond closely to the spatial and temporal distributions of vehicular traffic. Wind speed and atmospheric mixing also influence carbon monoxide concentrations. Under inversion conditions, carbon monoxide concentrations may be distributed more uniformly over an area that may extend some distance from vehicular sources.

When inhaled at high concentrations, carbon monoxide combines with hemoglobin in the blood and reduces the oxygen-carrying capacity of the blood. This results in reduced oxygen reaching the brain, heart, and other body tissues. This condition is especially critical for people with cardiovascular diseases, chronic lung disease, or anemia, as well as for fetuses.

Carbon monoxide concentrations have declined dramatically in California due to existing controls and programs. Carbon monoxide concentrations are expected to continue declining due to the ongoing retirement of older, more polluting vehicles from the mix of vehicles on the road network.

Respirable Particulate Matter (PM_{10} and $PM_{2.5}$)

PM_{10} and $PM_{2.5}$ consist of particulate matter that is 10 microns or less in diameter and 2.5 microns or less in diameter, respectively. (A micron is one-millionth of a meter). PM_{10} and $PM_{2.5}$ represent fractions of particulate matter that can be inhaled into the air passages and the lungs and can cause adverse health effects. Acute and chronic health effects associated with high particulate levels include the aggravation of chronic respiratory diseases, heart and lung disease, and coughing, bronchitis and respiratory illnesses in children. Recent mortality studies have shown an association between morbidity and mortality and daily concentrations of particulate matter in the air. Particulates can also damage materials and reduce visibility. One common source of $PM_{2.5}$ is diesel particulate emissions.

Traffic generates particulate matter emissions through entrainment of dust and dirt particles that settle onto roadways and parking lots. PM_{10} also is emitted by burning wood in residential wood stoves and fireplaces and open agricultural burning. PM_{10} can remain in the atmosphere for up to seven days before gravitational settling, rainout and washout remove it.

Nitrogen Dioxide

NO_2 is a reddish brown gas that is a by-product of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, nitrogen dioxide can increase the risk of acute and chronic respiratory disease and reduce visibility. NO_2 may be visible as a coloring component of brown clouds on high pollution days, especially in conjunction with high ozone levels.

Hazardous Air Pollutants

At the federal level, non-criteria air pollutants capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness) are referred to as Hazardous Air Pollutants (HAPs). All HAPs are listed in the Clean Air Act, section 112(b). California refers to these same air pollutants as Toxic Air Contaminants (TACs). In 1993, California Assembly Bill (AB) 2728 was passed and AB 2728 requires the California Air Resources Board (CARB) to identify any substance listed as a federal HAP as a TAC in California. Therefore, HAPs are a subset of TACs in California.

State

The California Clean Air Act (CCAA) is patterned after the FCAA. California has adopted ambient standards that are more stringent than the federal standards for criteria air pollutants.

These are shown in **Table 3.2-1**. Under the CCAA, areas are designated as attainment or nonattainment with respect to the state standards. **Table 3.2-2** summarizes the attainment status with California standards in the project area.

The California Air Resources Board (CARB) manages air quality, regulates mobile emissions sources, and oversees the activities of county Air Pollution Control Districts and regional Air Quality Management Districts. CARB establishes state ambient air quality standards and vehicle emissions standards.

Toxic Air Contaminants (TACs)

The California Health and Safety Code defines non-criteria pollutants, or TACs, as air pollutants which may cause or contribute to an increase in mortality or serious illness, or which may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. A total of 243 substances have been designated as TACs under California law; they include the 189 hazardous air pollutants (HAPs) that have been identified by the federal government. The Air Toxics "Hot Spots" Information and Assessment Act of 1987 (AB 2588) seeks to identify and evaluate risk from air toxics sources but AB 2588 does not regulate air toxics emissions. Toxic air contaminant emissions from individual facilities are quantified and prioritized. Depending on the risk levels, emitting facilities are required to implement varying levels of risk reduction measures. The proposed project does not include developing facilities that may be categorized as "High-priority," which are required to perform a health risk assessment.

Diesel Particulate Matter

In August of 1998, CARB identified particulate emissions from diesel-fueled engines (diesel particulate matter, or DPM) as TACs. Diesel particulates, as defined by most emission standards, are sampled from diluted and cooled exhaust gases. This definition includes both solids and liquid material that condenses during the dilution process. The basic fractions of DPM are elemental carbon, heavy hydrocarbons derived from the fuel and lubricating oil and hydrated sulfuric acid derived from the fuel sulfur. DPM contains a large portion of the polycyclic aromatic hydrocarbons (PAH) found in diesel exhaust. Diesel particulates include small nuclei mode particles of diameters below 0.04µm and their agglomerates of diameters up to 1µm. Ambient exposures to diesel particulates in California are significant fractions of total TAC levels in the state.

CARB developed the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (CARB, 2000). The document represents a proposal to reduce diesel particulate emissions, with the goal to reduce emissions and the associated health risk by 75 percent by 2010 and by 85 percent by 2020. The program aims to require the use of state-of-the-art catalyzed diesel particulate filters and ultra low sulfur diesel fuel on diesel-fueled engines. On July 26, 2007, CARB adopted a regulation to reduce DPM NO_x emissions from existing off-road heavy-duty diesel vehicles used in construction, mining, and industrial operations. The regulation requires fleets to apply exhaust retrofits that capture pollutants before they are emitted to the air, and to accelerate turnover of fleets to newer, cleaner engines.

CARB recently published the *Air Quality and Land Use Handbook: A Community Health Perspective* (CARB, 2005). The primary goal in developing the handbook was to provide information that will help keep California's children and other vulnerable populations out of harm's way with respect to nearby sources of air pollution. The handbook highlights recent studies that have shown that public exposure to air pollution can be substantially elevated near freeways and certain other facilities. However, the health risk is greatly reduced with distance. For that reason, CARB provided some general recommendations aimed at keeping appropriate distances between sources of air pollution and sensitive land uses, such as residences.

Climate Change and Greenhouse Gases

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, similar to a greenhouse. The accumulation of GHGs has been implicated as a driving force for Global Climate Change. Definitions of climate change vary between and across regulatory authorities and the scientific community, but in general can be described as the changing of the earth's climate caused by natural fluctuations and the impact of human activities that alter the composition of the global atmosphere. Both natural processes and human activities emit GHGs.

The major concern is that increases in GHGs are causing Global Climate Change. Global Climate Change is a change in the average weather on earth that can be measured by wind patterns, storms, precipitation and temperature. Although there is disagreement as to the speed of global warming and the extent of the impacts attributable to human activities, the vast majority of the scientific community now agrees that there is a direct link between increased emission of GHGs and long term global temperature. Potential global warming impacts in California may include, but are not limited to, loss in snow pack, sea level rise, more extreme heat days per year, more high ozone days, more large forest fires, and more drought years. Secondary effects are likely to include a global rise in sea level, impacts to agriculture, changes in disease vectors, and changes in habitat and biodiversity.

Executive Order S-3-05

In 2005, in recognition of California's vulnerability to the effects of climate change, Governor Schwarzenegger established Executive Order S-3-05, which sets forth a series of target dates by which statewide emission of greenhouse gas would be progressively reduced, as follows:

- By 2010, reduce greenhouse gas emissions to 2000 levels;
- By 2020, reduce greenhouse gas emissions to 1990 levels; and
- By 2050, reduce greenhouse gas emissions to 80 percent below 1990 levels.

Assembly Bill 32 (AB 32)

In 2006, California passed the California Global Warming Solutions Act of 2006 (Assembly Bill No. 32; California Health and Safety Code Division 25.5, Sections 38500, et seq., or AB 32), which requires the California Air Resources Board (CARB) to design and implement emission limits, regulations, and other measures, such that statewide greenhouse gas emissions will be reduced to 1990 levels by 2020.

In December 2007, CARB approved the 2020 emission limit of 427 million metric tons of CO_2 equivalents of greenhouse gases. The 2020 target of 427 million metric tons of CO_2 equivalent (CO_2E) requires the reduction of 169 million metric tons of CO_2E, or approximately 30 percent, from the state's projected 2020 emissions of 596 million metric tons of CO_2E (business-as-usual).

Also in December 2007, CARB adopted mandatory reporting and verification regulations pursuant to AB 32. The regulations will become effective January 1, 2009, with the first reports covering 2008 emissions. The mandatory reporting regulations require reporting for certain types of facilities that make up the bulk of the stationary source emissions in California. Currently, the draft regulation language identifies major facilities as those that generate more than 25,000 metric tons/year of CO_2E. Cement plants, oil refineries, electric-generating facilities/providers, cogeneration facilities, and hydrogen plants and other stationary combustion sources that emit more than 25,000 metric tons/year CO_2E, make up 94 percent of the point source CO_2E emissions in California (CARB, 2007).

In June, 2008, CARB published its *Climate Change Draft Scoping Plan* (CARB, 2008a). The *Climate Change Draft Scoping Plan* reported that CARB met the first milestones set by AB 32 in 2007: developing a list of early actions to begin sharply reducing greenhouse gas emissions; assembling an inventory of historic emissions; and establishing the 2020 emissions limit. After consideration of public comment and further analysis, CARB released the *Climate Change Proposed Scoping Plan* in October, 2008 (CARB, 2008b). The *Climate Change Proposed Scoping Plan* was approved by the California Air Resources Board (CARB) on December 11, 2008. The Proposed Scoping Plan proposes a comprehensive set of actions designed to reduce overall carbon emissions in California. Key elements of the Proposed Scoping Plan include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related greenhouse gas emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation. (CARB, 2008b)

The *Climate Change Proposed Scoping Plan* notes that "[a]fter Board approval of this plan, the measures in it will be developed and adopted through the normal rulemaking process, with public input" (CARB, 2008b).

The *Climate Change Proposed Scoping Plan* states that local governments are "essential partners" in the effort to reduce greenhouse gas emissions, and that they have "broad influence and, in some cases, exclusive jurisdiction" over activities that contribute to greenhouse gas

emissions. The plan acknowledges that local governments have broad influence and, in some cases, exclusive authority over activities that contribute to significant direct and indirect greenhouse gas emissions through their planning and permitting processes, local ordinances, outreach and education efforts, and municipal operations. Many of the proposed measures to reduce greenhouse gas emissions rely on local government actions. The plan encourages local governments to reduce greenhouse gas emissions by approximately 15 percent from current levels by 2020 (CARB, 2008b).

The *Climate Change Proposed Scoping Plan* also included recommended measures that were developed to reduce greenhouse gas emissions from key sources and activities while improving public health, promoting a cleaner environment, preserving our natural resources, and ensuring that the impacts of the reductions are equitable and do not disproportionately impact low-income and minority communities. These measures, shown below in **Table 3.2-3** by sector, also put the state on a path to meet the long-term 2050 goal of reducing California's greenhouse gas emissions to 80 percent below 1990 levels. These measures will be presented to the Board for approval at its meeting in December 2008. The measures in the Scoping Plan approved by the Board will be developed over the next two years and be in place by 2012.

Senate Bill 97

The provisions of Senate Bill 97, enacted in August 2007 as part of the State Budget negotiations, direct the Office of Planning and Research (OPR) to propose CEQA Guidelines "for the mitigation of GHG emissions or the effects of GHG emissions." SB 97 directs OPR to develop such guidelines by July 2009, and directs the State Resources Agency, the agency charged with adopting the CEQA Guidelines, to certify and adopt such guidelines by January 2010.

OPR Technical Advisory, CEQA and Climate Change

On June 19, 2008, OPR published a technical advisory on CEQA and Climate Change. The advisory provides OPR's perspective on the emerging role of CEQA in addressing climate change and GHG emissions, while recognizing that approaches and methodologies for calculating GHG emissions and addressing environmental impacts through CEQA review are rapidly evolving. The advisory recognizes that OPR will develop, and the Resources Agency will adopt amendments to the CEQA Guidelines pursuant to SB 97. In the interim, the technical advisory "offers informal guidance regarding the steps lead agencies should take to address climate change in their CEQA documents" (OPR, 2008).

The technical advisory points out that neither CEQA nor the CEQA Guidelines prescribe thresholds of significance or particular methodologies for performing an impact analysis. "This is left to lead agency judgment and discretion, based upon factual data and guidance from regulatory agencies and other sources where available and applicable" (OPR, 2008). OPR recommends that "the global nature of climate change warrants investigation of a statewide threshold of significance for GHG emissions" (OPR, 2008). Until such a standard is established, OPR advises that each lead agency should develop its own approach to performing an analysis for projects that generate GHG emissions (OPR, 2008).

TABLE 3.2-3
LIST OF RECOMMENDED ACTIONS BY SECTOR

Measure No.	Measure Description	GHG Reductions (Annual Million Metric Tons CO_2E)
Transportation		
T-1	Pavley I and II – Light Duty Vehicle Greenhouse Gas Standards	31.7
T-2	Low Carbon Fuel Standard (Discrete Early Action)	15
T-3[a]	Regional Transportation-Related Greenhouse Gas Targets	5
T-4	Vehicle Efficiency Measures	4.5
T-5	Ship Electrification at Ports (Discrete Early Action)	0.2
T-6	Goods Movement Efficiency Measures. • Ship Electrification at Ports • System-Wide Efficiency Improvements	3.5
T-7	Heavy-Duty Vehicle Greenhouse Gas Emission Reduction Measure – Aerodynamic Efficiency (Discrete Early Action)	0.93
T-8	Medium- and Heavy-Duty Vehicle Hybridization	0.5
T-9	High Speed Rail	1
Electricity and Natural Gas		
E-1	Energy Efficiency (32,000 GWh of Reduced Demand) • Increased Utility Energy Efficiency Programs • More Stringent Building & Appliance Standards Additional Efficiency and Conservation Programs	15.2
E-2	Increase Combined Heat and Power Use by 30,000 GWh (Net reductions include avoided transmission line loss)	6.7
E-3	Renewables Portfolio Standard (33% by 2020)	21.3
E-4	Million Solar Roofs (including California Solar Initiative, New Solar Homes Partnership and solar programs of publicly owned utilities) • Target of 3000 MW Total Installation by 2020	2.1
CR-1	Energy Efficiency (800 Million Therms Reduced Consumptions) • Utility Energy Efficiency Programs • Building and Appliance Standards • Additional Efficiency and Conservation Programs	4.3
CR-2	Solar Water Heating (AB 1470 goal)	0.1
Green Buildings		
GB-1	Green Buildings	26
Water		
W-1	Water Use Efficiency	1.4[b]
W-2	Water Recycling	0.3[b]
W-3	Water System Energy Efficiency	2.0[b]
W-4	Reuse Urban Runoff	0.2[b]
W-5	Increase Renewable Energy Production	0.9[b]
W-6	Public Goods Charge (Water)	TBD†
Industry		
I-1	Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	TBD
I-2	Oil and Gas Extraction GHG Emission Reduction	0.2
I-3	GHG Leak Reduction from Oil and Gas Transmission	0.9
I-4	Refinery Flare Recovery Process Improvements	0.3
I-5	Removal of Methane Exemption from Existing Refinery Regulations	0.01

TABLE 3.2-3 (continued)
LIST OF RECOMMENDED ACTIONS BY SECTOR

Measure No.	Measure Description	GHG Reductions (Annual Million Metric Tons CO_2E)
Recycling and Water Management		
RW-1	Landfill Methane Control (Discrete Early Action)	1
RW-2	Additional Reductions in Landfill Methane • Increase the Efficiency of Landfill Methane Capture	TBD[b]
RW-3	High Recycling/Zero Water • Commercial Recycling • Increase Production and Markets for Compost • Anaerobic Digestion • Extended Producer Responsibility • Environmentally Preferable Purchasing	9†
Forests		
F-1	Sustainable Forest Target	5
High Global Warming Potential (GWP) Gases		
H-1	Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Services (Discrete Early Action)	0.26
H-2	SF_6 Limits in Non-Utility and Non-Semiconductor Applications (Discrete Early Action)	0.3
H-3	Reduction of Perfuorocarbons in Semiconductor Manufacturing (Discrete Early Action)	0.15
H-4	Limit High GWP Use in Consumer Products Discrete Early Action (Adopted June 2008)	0.25
H-5	High GWP Reductions from Mobile Sources • Low GWP Refrigerants for New Motor Vehicle Air Conditioning Systems • Air Conditioner Refrigerant Leak Test During Vehicle Smog Check • Refrigerant Recovery from Decommissioned Refrigerated Shipping Containers • Enforcement of Federal Ban on Refrigerant Release during Servicing or Dismantling of Motor Vehicle Air Conditioning Systems	3.3
H-6	High GWP Reductions from Stationary Sources • High GWP Stationary Equipment Refrigerant Management Program: – Refrigerant Tracking/Reporting/Repair Deposit Program – Specifications for Commercial and Industrial Refrigeration Systems • Foam Recovery and Destruction Program • SF Leak Reduction and Recycling in Electrical Applications • Alternative Suppressants in Fire Protection Systems • Residential Refrigeration Early Retirement Program	10.9
H-7	Mitigation Fee on High GWP Gases	5
Agriculture		
A-1	Methane Capture at Large Dairies	1.0[b]

[a] This is not the SB 375 regional target. CARB will establish regional targets for each MPO region following the input of the regional targets advisory committee and a consultation process with MPO's and other stakeholders per SB 375

[b] GHG emission reduction estimates are not included in calculating the total reductions needed to meet the 2020 target

OPR sets out the following process for evaluating GHG emissions. First, agencies should determine whether GHG emissions may be generated by a proposed project, and if so, quantify or estimate the emissions by type or source. Calculation, modeling or estimation of GHG emissions should include the emissions associated with vehicular traffic, energy consumption, water usage and construction activities (OPR, 2008).

Agencies should then assess whether the emissions are "cumulatively considerable" even though a project's GHG emissions may be individually limited. OPR states: "Although climate change is ultimately a cumulative impact, not every individual project that emits GHGs must necessarily be found to contribute to a significant cumulative impact on the environment" (OPR, 2008). Individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice (OPR, 2008).

Finally, if the lead agency determines emissions are a cumulatively considerable contribution to a significant cumulative impact, the lead agency must investigate and implement ways to mitigate the emissions (OPR, 2008). OPR states: "Mitigation measures will vary with the type of project being contemplated, but may include alternative project designs or locations that conserve energy and water, measures that reduce vehicle miles traveled (VMT) by fossil-fueled vehicles, measures that contribute to established regional or programmatic mitigation strategies, and measures that sequester carbon to offset the emissions from the project" (OPR, 2008). OPR concludes that "A lead agency is not responsible for wholly eliminating all GHG emissions from a project; the CEQA standard is to mitigate to a level that is "less than significant" (OPR, 2008). The technical advisory includes a list of mitigation measures that can be applied on a project-by-project basis.

OPR Preliminary Draft Amendments to the CEQA Guidelines

In accordance with its requirements under Senate Bill 97, OPR has developed preliminary draft amendments to the CEQA Guidelines for regulatory guidance with respect to the analysis and mitigation of the potential effects of GHG emissions (OPR, 2009). OPR does not identify a threshold of significance for GHG in the amendments, nor does it recommend assessment methodologies or specific mitigation measures. Rather, the preliminary draft amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The process of finalizing and adopting the amendments must be completed by January 1, 2010, pursuant to Senate Bill 97. Summaries of the main amendments, as they pertain to the proposed project, are provided below.

Preliminary draft CEQA Guidelines Section 15064.4, *Determining the Significance of Impacts from Greenhouse Gas Emissions*, encourages lead agencies to consider four factors to assess the significance of GHG emissions, including the extent that the project: 1) would help or hinder the state's goals of reducing GHG emissions to 1990 levels by the year 2020 as stated in the Global Warming Solutions Act of 2006; 2) may increase the consumption of fuels or other energy resources; 3) may result in increased energy efficiency of and a reduction in overall GHG emissions from an existing facility; and 4) impacts or emissions exceed any threshold of significance that applies to the project. Preliminary draft CEQA Guidelines Section 15064.4 also recommends that lead agencies make a good-faith effort, based on available information, to describe, calculate or estimate the amount of GHG emissions associated with a project, including emissions associated with energy consumption and vehicular traffic.

Preliminary draft text has been added to CEQA Guidelines Section 15126.4, *Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects*, that includes considerations for lead agencies related to feasible mitigation measures to reduce GHG emissions, including but not limited to the project's energy consumption, including consumption

of fossil fuels. Added recommended considerations are that mitigation measures may include: project features, project design, or other measures which are incorporated into the project to substantially reduce energy consumption or GHG emissions; compliance with the requirements in a previously approved plan or mitigation program for the reduction or sequestration of GHG emissions, which plan or program provides specific requirements that will avoid or substantially lessen the potential impacts of the project; and measures that sequester carbon or carbon-equivalent emissions. In addition, the added draft text CEQA Guidelines Section 15126.4 include a requirement that where mitigation measures are proposed for reduction of GHG emissions through off-site measures or purchase of carbon offsets, these mitigation measures must be part of a reasonable plan of mitigation that the relevant agency commits itself to implementing.

In addition, as part of the preliminary draft CEQA Guideline amendments, OPR added a new set of environmental checklist questions (VII. *Greenhouse Gas Emissions*) to the CEQA Guidelines Appendix G. The new set includes the following two questions:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment, based on any applicable threshold of significance?

b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?

California Air Pollution Control Officers Association (CAPCOA)

In January 2008, the California Air Pollution Control Officers Association (CAPCOA) issued a "white paper" on evaluating and addressing GHGs under CEQA (CAPCOA, 2008). This resource guide was prepared to support local governments as they develop their programs and policies around climate change issues. The paper is not a guidance document. It is not intended to dictate or direct how any agency chooses to address GHG emissions. Rather, it is intended to provide a common platform of information about key elements of CEQA as they pertain to GHG, including an analysis of different approaches to setting significance thresholds.

The paper notes that for a variety of reasons local agencies may decide not to have a CEQA threshold. Local agencies may also decide to assess projects on a case-by-case basis when the projects come forward. The paper also discusses a range of GHG emission thresholds that could be used. The range of thresholds discusses includes a GHG threshold of zero and several non-zero thresholds. Non-zero thresholds include percentage reductions for new projects that would allow the state to meet its goals for GHG emissions reductions by 2020 and perhaps 2050. These would be determined by a comparison of new emissions versus business as usual emissions and the reductions required would be approximately 30 percent to achieve 2020 goals and 90 percent (effectively immediately) to achieve the more aggressive 2050 goals. These goals could be varied to apply differently to new project, by economic sector, or by region in the state.

Other non-zero thresholds are discussed in the paper include:

- 900 metric tons/year CO_2E (a market capture approach);
- 10,000 metric tons/year CO_2E (potential ARB mandatory reporting level with Cap and Trade);

- 25,000 metric tons/year CO_2E (the ARB mandatory reporting level for the statewide emissions inventory);
- 40,000 to 50,000 metric tons/year CO_2E (regulated emissions inventory capture – using percentages equivalent to those used in air districts for criteria air pollutants),
- Projects of statewide importance (9,000 metric tons/year CO_2E for residential, 13,000 metric tons/year CO_2E for office project, and 41,000 metric tons/year CO_2E for retail projects), and
- Unit-based thresholds and efficiency-based thresholds that were not quantified in the report.

ARB Draft GHG Significance Thresholds

On October 24, 2008, ARB released its *Preliminary Draft Staff Proposal on Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act* for review and public comment (ARB, 2008). The Proposal identifies benchmarks or standards that assist lead agencies in the significance determination for industrial, residential, and commercial projects. Staff intends to make its final recommendations on thresholds in early 2009, consistent with OPR's timeline for issuing draft CEQA guidelines addressing GHG emissions and to provide much needed guidance to lead agencies in the near term. The *Proposal* currently focuses on two sectors for which local agencies are typically the CEQA lead agency: industrial projects; and residential and commercial projects. Future proposals will focus on transportation projects, large dairies and power plant projects.

In summary, the *Proposal* recommends:

- In general, categorical exemptions will continue to apply;
- If GHGs are adequately addressed at the programmatic level (i.e., consistent with regional GHG budgets), the impact of certain individual projects can be found to be insignificant;
- Industrial projects below the operational emissions level (7,000 metric tons/year CO2E) that also meet performance standards for construction can be found to be less than significant.
- Residential and commercial projects below the operational emissions level (unspecified as of December 2008) that also meet performance standards for construction, energy, water, waste and transportation can be found to be less than significant.
- If a project cannot meet the above requirements, it should be presumed to have significant impacts related to climate change and all feasible GHG mitigation measures (i.e., carbon offsets) should be implemented.

For residential and commercial projects, ARB staff's objective is to develop a threshold on performance standards that will substantially reduce the GHG emissions from new projects and streamline the permitting of carbon-efficient projects. Performance standards will address the five major emission sub-sources for the sector: energy use, transportation, water use, waste, and construction. Projects may alternatively incorporate mitigation equivalent to these performance standards, such as measures from green building rating systems.

Local

Regional Comprehensive Plan and Guide

The Southern California Association of Governments (SCAG) is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties and addresses regional issues relating to transportation, the economy, community development, and the environment. SCAG is the federally designated metropolitan planning organization (MPO) for the majority of the southern California region and is the largest MPO in the nation. As the designated MPO, SCAG is mandated by the federal government to develop and implement regional plans that address transportation, growth management, hazardous waste management, and air quality issues. With respect to air quality planning, SCAG has prepared the Regional Comprehensive Plan and Guide (RCPG) for the San Bernardino County region, which includes Growth Management and Regional Mobility chapters that form the basis for the land use and transportation components of the Air Quality Management Plan (AQMP) (see below) and are utilized in the preparation of air quality forecasts and the consistency analysis that is included in the AQMP.

South Coast Air Quality Management District (SCAQMD)

The SCAQMD has jurisdiction over an area of approximately 10,743 square miles. This area includes all of Orange County, all of Los Angeles County except for the Antelope Valley, the non-desert portion of western San Bernardino County, and the western and Coachella Valley portions of Riverside County. The South Coast Air Basin (SCAB) is a subregion of the SCAQMD jurisdiction. While air quality in this area has improved, continued diligence is required to meet air quality standards. The SCAQMD has adopted a series of AQMPs to meet the CAAQS and NAAQS. These plans require control technology for existing sources, control programs for area sources and indirect sources, a SCAQMD permitting system designed to allow no net increase in emissions from any new or modified permitted emission sources and transportation control measures.

The SCAQMD adopted a comprehensive AQMP update, the 2007 AQMP for the SCAB, on June 1, 2007. The 2007 AQMP outlines the air pollution control measures needed to meet federal health-based standards for ozone (8-hour standard) by 2024, and $PM_{2.5}$ by 2015. This revision to the AQMP also addresses several state and federal planning requirements and incorporates significant new scientific data, primarily in the form of updated emissions inventories, ambient measurements, new meteorological episodes and new air quality modeling tools. The 2007 AQMP is consistent with and builds upon the approaches taken in the 2003 AQMP for the attainment of the federal ozone air quality standard but highlights the significant amount of reductions needed and the urgent need to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under FCAA (SCAQMD, 2007).

The SCAQMD adopts rules and regulations to implement portions of the AQMP. Several of these rules may apply to construction or operation of the proposed project. For example, SCAQMD Rule 403 requires the implementation of best available fugitive dust control measures during active operations capable of generating fugitive dust emissions from on-site earth-moving activities, construction/demolition activities, and construction equipment travel on paved and

unpaved roads. As another example, SCAQMD Regulation XIII ensures that the operation of new facilities do not interfere with progress in attainment of the NAAQS.

The SCAQMD has published a *CEQA Air Quality Handbook* (SCAQMD, 1993) that is intended to provide local governments with guidance for analyzing and mitigating project-specific air quality impacts. This handbook provides standards, methodologies and procedures for conducting air quality analyses and was used extensively in the preparation of this analysis.

The significance thresholds and analysis methodologies in the SCAQMD's *CEQA Air Quality Handbook* are used in evaluating project impacts.

SCAQMD Draft GHG Significance Threshold

On December 5, 2008, the South Coast Air Quality Management District (SCAQMD) Governing Board adopted the staff proposal for an interim GHG significance threshold for projects where the SCAQMD is lead agency. The interim threshold consists of five tiers of standards that could result in a finding of less than significant impact. The tiers include CEQA exemptions, consistency with regional GHG budgets, less than significant screening levels for industrial projects (10,000 metric tons/year CO_2E) and commercial/residential projects (3,000 metric tons/year CO_2E), performance standards (i.e., 30 percent less than Business As Usual [BAU]), and carbon offsets (SCAQMD, 2008).

TABLE 3.2-4
AIR QUALITY SIGNIFICANCE THRESHOLDS

Pollutant	Construction	Operation
NO_x	100 lbs/day	55 lbs/day
VOC (ROG)	75 lbs/day	55 lbs/day
PM_{10}	150 lbs/day	150 lbs/day
$PM_{2.5}$	55 lbs/day	55 lbs/day
CO	550 lbs/day	550 lbs/day

SOURCE: SCAQMD, *CEQA Air Quality Handbook* April 1993. Adoption of $PM_{2.5}$ occurred on October 6, 2006.

3.2.2 Setting

Regional Setting

The proposed project is located in San Bernardino County, which lies within the SCAB. The SCAB consists of the Los Angeles County, San Bernardino County, Orange County, and a portion of Riverside County. The SCAB is an approximately 6,600 square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east. It includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties.

Climate

About 90 percent of the county is desert; the remainder consists of the San Bernardino Valley and the San Bernardino Mountains. The average maximum annual temperature in San Bernardino is 80.1 degrees Fahrenheit, with an average minimum of 49.3. The average total precipitation in inches is 16.07. The Santa Ana winds typically blow out of the Cajon pass into the valley in the autumn.

Project Area Setting

The SCAQMD maintains monitoring stations within San Bernardino County that monitor air quality and compliance with associated ambient standards. The closest station to the project site is Redlands-Dearborn Monitoring Station. The following pollutants are monitored at this station: ozone (O_3), PM_{10} and $PM_{2.5}$. The most recent published data for the Redlands-Dearborn Monitoring Station is presented in **Table 3.2-5,** which encompasses the years 2004 through 2006.

TABLE 3.2-5
AIR QUALITY DATA SUMMARY (2004–2006)

Pollutant	Monitoring Data by Year			
	Standard[a]	2004	2005	2006
Ozone – Redlands-Dearborn				
Highest 1 Hour Average (ppm)[b]	0.09	**0.16**	**0.15**	**0.17**
Days over State Standard		76	36	62
Highest 8 Hour Average (ppm)[b]	0.08	**0.14**	**0.12**	**0.14**
Days over National Standard		12	6	11
Particulate Matter (PM_{10}) – Redlands-Dearborn				
Highest 24 Hour Average ($\mu g/m^3$)[b]	50	**84**	**58**	**97**
Est. Days over State Standard[c]		113.7	50.2	62.7
Highest 24 Hour Average ($\mu g/m^3$)[b] – National Measurement	150	88	61	103
Est. Days over National Standard[c]		0	0	0
State Annual Average ($\mu g/m^3$)[b]	20	**36.5**	**31.5**	**34.4**
Particulate Matter ($PM_{2.5}$) – San Bernardino-4th Street				
Highest 24 Hour Average ($\mu g/m^3$)[b]	35	**93.4**	**106.2**	**55**
Days over National Standard		4	1	0
State Annual Average ($\mu g/m^3$)[b]	12	NA	NA	NA

[a] Generally, state standards and national standards are not to be exceeded more than once per year.

[b] ppm = parts per million; $\mu g/m^3$ = micrograms per cubic meter.

[c] PM_{10} is not measured every day of the year. Number of estimated days over the standard is based on 365 days per year.

NOTES: Values in **bold** are in excess of at least one applicable standard. NA = Not Available.

SOURCES: California Air Resources Board, 2007c. *Summaries of Air Quality Data*, 2004, 2005, 2006; http://www.arb.ca.gov/adam/cgi-bin/db2www/polltrendsb.d2w/start

Sensitive Receptors

Some land uses are considered more sensitive to air pollutants than others. Residences, hotels, schools, rest homes, and hospitals are generally more sensitive to air emissions than commercial and industrial land uses. The closest sensitive receptors are residential neighborhoods located within 500 feet southeast of the existing Crafton Hills Reservoir, within 200 feet of the proposed maintenance road below the existing reservoir, and approximately 50 feet south of the proposed spoil area. The closest residential land uses to the proposed connector pipeline are approximately 1,150 feet southeast of the intersection of SR-38 and Bryant Street. A new residential development is currently under construction within 200 feet of the proposed pipeline corridor and reservoir access road, on the south frontage of Mill Creek Road. The locations of sensitive receptors are also shown in **Figure 3.2-1**.

Odorous Emissions

Though offensive odors from stationary sources rarely cause any physical harm, they still remain unpleasant and can lead to public distress generating citizen complaints to local governments. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

3.2.3 Impact Assessment

The proposed project's potential impacts were assessed using the *CEQA Guidelines* Appendix G Checklist. The following sections discuss the key issue areas identified in the *CEQA Guidelines* with respect to the proposed project's potential effect to air quality. Significance thresholds are identified and a significance conclusion is made following the discussion.

Consistency with Air Quality Management Plans

This section discusses the following CEQA Checklist question:

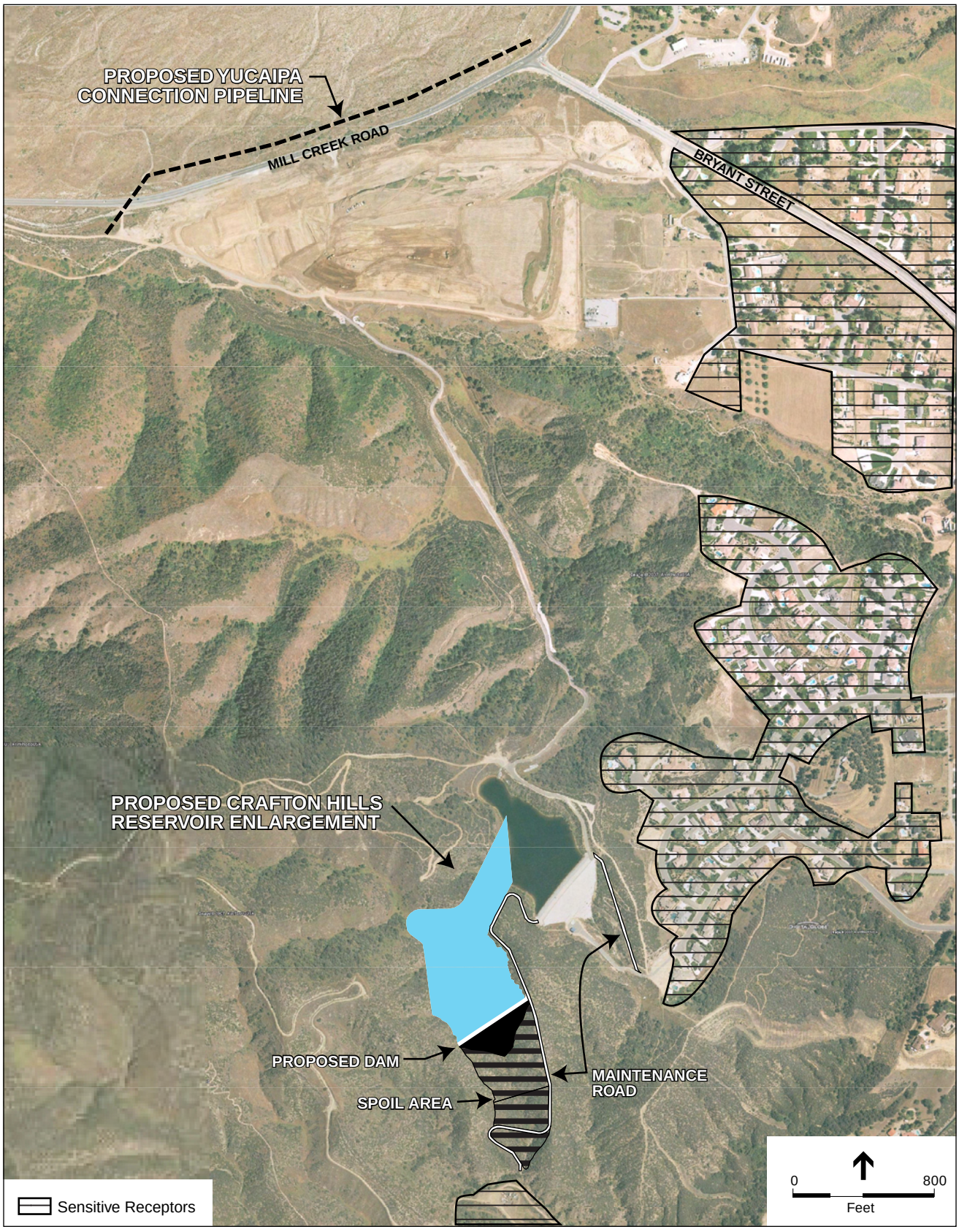
> *Would the project conflict with or obstruct implementation of the applicable air quality plan?*

Significance Threshold

The proposed project would have a significant impact if it were inconsistent with the applicable AQMP.

Impact Analysis

The SCAQMD has designated two key indicators of consistency with air quality policies. The first criterion requires that the project not result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay the timely attainment of air quality standards or the interim emission reductions specified in the AQMP. The second criterion requires that the project not exceed the assumptions made in preparing the AQMP.



SOURCE: FEMA, 2007; GlobeXplorer, 2007; DWR, 2007.

DWR - Crafton Reservoir . 206008.04

Figure 3.2-1
Sensitive Receptors

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis include forecasts of project emissions in a regional context during construction and operation. These project emissions are discussed in detail in the following section. Mitigation Measures AQ-1 through AQ-9 are included to reduce fugitive dust emissions at construction sites. The AQMP identifies certain construction activities which adversely affect air quality in the basin and provides source control measures to reduce these effects. These source control measures are adopted as Rules by the SCAQMD. Compliance with the Rules established by the SCAQMD to reduce construction emissions including fugitive dust control measures and vehicle maintenance measures would ensure that the project would not conflict with the current AQMP. Compliance with SCAQMD Rules for construction activities for the emissions of criteria pollutants would ensure consistency with the AQMP.

The second AQMP consistency criterion requires that the project does not exceed the assumptions in the AQMP. A project is consistent with the AQMP if it is consistent with the population, housing and employment assumptions which were used in the development of the AQMP. The 2007 AQMP, the most recent AQMP adopted by the SCAQMD, incorporates, in part, SCAG's 2004 Regional Transportation Plan (RTP) socioeconomic forecast projections of regional population and employment growth. The 2004 RTP is based on growth assumptions through 2030 developed by each of the cities and counties in the SCAG region. All projects in the region contribute to regional pollution, and the emissions associated with these projects are modeled by the SCAQMD to determine future air quality conditions. The proposed project site is located in the San Bernardino Associated Governments sub-region of the SCAG. The San Bernardino Associated Governments growth forecasts have been incorporated into the 2030 SCAG projections, which were used in the development of the 2007 AQMP. The proposed project does not increase population to the area, or help support new populations. The proposed project would provide operational reliability to the local water system and decrease electricity usage during peak demand periods, therefore, the proposed project is consistent with the assumptions included in the AQMP.

Mitigation Measures

Mitigation Measure AQ-1: DWR shall ensure that contractors implement a fugitive dust control program pursuant to the provisions of SCAQMD Rule 403.

Mitigation Measure AQ-2: DWR shall ensure that construction equipment is properly tuned and maintained in accordance with manufacturer's specifications.

Mitigation Measure AQ-3: Coatings and solvents used in the proposed project shall be consistent with applicable SCAQMD Rule 1113.

Mitigation Measure AQ-4: Dust control measures such as wetting or use of soil binders shall be implemented on haul roads throughout each construction day to minimize fugitive dust emissions at the closest sensitive receptors.

Mitigation Measure AQ-5: Construction vehicle speeds on dirt access roads shall be no greater than 15 miles per hour.

Mitigation Measure AQ-6: Wheel washers or other similar methods shall be installed where vehicles exit the construction site onto paved roads.

Mitigation Measure AQ-7: Haul vehicles shall be covered or comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.

Mitigation Measure AQ-8: DWR shall ensure that trucks and construction vehicles shall be prohibited from idling in excess of five minutes, both on- and off-site, when not in use.

Mitigation Measure AQ-9: Electricity from power poles rather than temporary diesel- or gasoline-powered generators shall be used where available.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measures AQ-1 through AQ-9 would ensure that project emissions complied with SCAQMD Rules for control of criteria pollutant emissions.

Violation of an Air Quality Standard

This section discusses the following CEQA Checklist question:

Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Significance Threshold

Criteria Pollutants. Construction and/or operation of the proposed project would have a significant impact if it generated emissions of air pollutants that exceed the SCAQMD emissions thresholds (**Table 3.2-4**).

CO Hot Spots. Operation of the proposed project would result in a significant air quality impact if any of the following conditions occur at an intersection of roadway within ¼ mile of a sensitive receptor:

- The proposed project causes an exceedance of the California one-hour or eight-hour CO standards of 20 or 9.0 ppm, respectively; or
- For intersection or roadways where existing CO levels exceed California standards, the incremental increase due to the proposed project is equal to or greater than 1.0 ppm for the one-hour CO standard, or 0.45 ppm for the eight-hour CO standard.

Toxic Air Contaminants. Construction and/or operation of the proposed project would result in a significant air quality impact if any of the following occur:

- On-site stationary sources emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million or an acute or chronic hazard index of 1.0. (SCAQMD, 2005a).

- Mobile sources emit carcinogenic or toxic air contaminants that individually or cumulatively exceed the maximum individual cancer risk of ten in one million or an acute or chronic hazard index of 1.0. (SCAQMD, 2005a).
- Hazardous materials associated with on-site stationary sources result in an accidental release of air toxic emissions or acutely hazardous materials posing a threat to public health and safety.

Impact Analysis

Construction

Construction-related emissions would cause adverse effects on air quality during the 12 to 18 month construction period. Construction activities include clearing and grubbing of approximately 30 acres, earthmoving, spoiling of material, and general construction. Earthmoving activities include cut-and-fill operations, trenching, soil compaction, and grading. Spoiling of material includes stockpiling of aggregate and preparation of on-site material for use in concrete and grout manufacture. General construction includes adding improvements such as roadway surfaces, structures, and facilities. The emissions generated from these construction activities include:

- Dust (including PM_{10} and $PM_{2.5)}$ primarily from "fugitive" sources (i.e., emissions released through means other than through a stack or tailpipe) such as soil disturbance;
- Combustion emissions of criteria air pollutants (ROG, NO_x, carbon monoxide, carbon dioxide, PM_{10}, and $PM_{2.5}$) primarily from operation of heavy off-road construction equipment (primarily diesel-operated), portable auxiliary equipment, and construction worker automobile trips (primarily gasoline-operated); and
- Evaporative emissions (ROG) from asphalt paving and architectural coatings.

Construction-related fugitive dust emissions would vary from day to day, depending on the level and type of activity, silt content of the soil, and the weather. In the absence of mitigation, construction activities may result in significant quantities of dust, and as a result, local visibility and PM_{10} concentrations may be adversely affected on a temporary and intermittent basis during construction. In addition, the fugitive dust generated by construction would include not only PM_{10}, but also larger particles, which would fall out of the atmosphere within several hundred feet of the site and could result in nuisance-type impacts. It is mandatory for all construction projects in the SCAB to comply with SCAQMD Rule 403 for fugitive dust (SCAQMD, 2005b). Specific Rule 403 control requirements include, but are not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the proposed project site, and maintaining effective cover over exposed areas.

For the proposed project, NO_x, ROG, PM_{10}, $PM_{2.5}$, CO, and CO_2 construction emissions were calculated based on DWR's estimates of maximum crew, truck trip, and construction activity data. Emissions are based on criteria pollutant emission factors from URBEMIS 2007. The results of this analysis are provided in Appendix C-1 are summarized in **Table 3.2-6**. The results indicate project construction would have significant impacts to air quality due to emissions that exceed thresholds for NO_x, PM_{10} and $PM_{2.5}$.

TABLE 3.2-6
EMISSIONS FROM PROJECT CONSTRUCTION
(pounds per day)[a]

Reservoir and Pipeline Construction	ROG	NO_x	CO	PM_{10}[b]	$PM_{2.5}$[b]	CO_2
2009 Totals Unmitigated	19	**149**	78	**200**	47	14,442
2009 Totals Mitigated	19	**149**	78	**200**	47	14,442
2010 Totals Unmitigated	39	**328**	170	**399**	**95**	33,136
2010 Totals Mitigated	39	**328**	170	**310**	**76**	33,136
2011 Totals Unmitigated	20	**176**	90	**199**	47	18,694
2011 Totals Mitigated	20	**176**	90	111	29	18,694
SCAQMD Thresholds	55	55	550	150	55	NA
Significant (Yes or No)?	No	**YES**	No	**YES**	**YES**	NA

a Project construction emissions estimates for off-road equipment were made using URBEMIS2007, version 9.2.4.

b PM_{10} and $PM_{2.5}$ emission estimates are based on compliance with SCAQMD Rule 403 requirements for fugitive dust suppression, mitigated in URBEMIS 2007. The mitigations include measures for soil stabilization (i.e.; replace ground cover in disturbed areas quickly; water exposed surfaces two times daily; and equipment loading/unloading measures) and unpaved road measures (i.e., reduce speed on unpaved roads to less than 15 mph, and water unpaved roads two times a day).

NOTE: Values in **bold** are in excess of the applicable SCAQMD significance threshold. NA = Not Available, Construction phase detail can be found in Appendix C.

SOURCE: ESA, 2008.

Operations

There would be no increase in operational traffic generated by the proposed project. Operation of the proposed project would not require additional employees. Only a few employees are expected to be at the reservoir on any given day for routine inspection and maintenance of the pipelines. No additional energy would be generated to pump water to the reservoir. The project would lessen energy generation during peak periods.

Toxic Air Contaminants

The greatest potential for TAC emissions would be related to diesel particulate emissions associated with heavy equipment operations during grading, excavation, and transportation activities. According to SCAQMD methodology, health effects from carcinogenic air toxics are usually described in terms of individual cancer risk. "Individual Cancer Risk" is the likelihood that a person exposed to concentrations of TACs would contract cancer over a 70-year lifetime, based on the use of standard risk-assessment methodology. A health risk assessment (HRA) was conducted for the proposed project; it concluded that DPM emissions generated by construction of the proposed project would be below the SCAQMD significance threshold of 10 in one million. See the HRA in Appendix C-2.

Mitigation Measures

Implement Mitigation Measures AQ-1 through AQ-9.

Significance Conclusion

Significant and unavoidable. Even with implementation of the mitigation measures listed above, short-term construction-related emissions of NO_x, PM_{10}, and $PM_{2.5}$ would exceed

SCAQMD emissions thresholds (Table 3.2-4) and the associated air quality impacts would be significant and unavoidable.

Cumulative Air Emissions

This section discusses the following CEQA Checklist question:

> *Would the project result in a cumulatively considerable net increase of any nonattainment pollutant (including releasing emissions that exceed quantitative thresholds for ozone precursors)?*

Significance Threshold

The proposed project would contribute significant quantities of an air pollutant for which the cumulative baseline condition is in nonattainment status according to the federal Clean Air Act.

Impact Analysis

A cumulative impact arises when two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant impacts, meaning that the project's incremental effects must be viewed in connection with the effects of past, current, and probable future projects. Notably, any project that would individually have a significant air quality impact would also be considered to have a significant cumulative impact.

Construction activity associated with other projects would generally involve the use of similar equipment and may overlap with the construction schedule of the proposed project. As with the proposed project, it is assumed that other project construction activity would comply with the SCAQMD required mitigation measures, which would reduce air quality impacts but not eliminate air pollutant emissions completely.

The SCAQMD's approach for assessing cumulative operational impacts is based on the SCAQMD's AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and state CAAs. This forecast also takes into account SCAG's forecasted future regional growth. As such, the analysis of cumulative impacts focuses on determining whether the project is consistent with forecasted future regional growth. If a project is consistent with the regional population, housing and employment growth assumptions upon which the SCAQMD's AQMP is based, then future development would not impede the attainment of ambient air quality standards and a significant cumulative air quality impact would not occur.

As discussed above and in Appendix C-2, proposed project TAC emissions would not have a significant impact on community health. However, cumulative sources from proposed projects throughout the SCAB would emit substantial amounts of TACs. The estimated carcinogenic risk in the SCAB is currently estimated at 704 per million people (SCAQMD, 2008). The impact of TACS to community health within the SCAB is a regional concern that has been assessed by the SCAQMD. The SCAQMD has published an Air Toxics Control Plan designed to limit TAC

emissions in an equitable and cost-effective manner (SCAQMD, 2000a). In addition, the SCAQMD addressed health risk in the SCAB and TAC emissions reduction measures in the 2003 AQMP.

Mitigation Measures

Implement Mitigation Measures AQ-1 through AQ-9.

Significance Conclusion

Significant and unavoidable. Implementation of Mitigation Measures AQ-1 through AQ-9 would reduce emissions associated with primarily PM emissions generated by construction activities. Nonetheless, the proposed project, alone and together with other construction projects, would generate emissions of NO_x, PM_{10} and $PM_{2.5}$ that exceed SCAQMD thresholds. The air basin is in non-attainment for NO_x. This would be a significant cumulative impact for the proposed project for the short-term duration of construction.

The TAC emissions associated with construction and operation of the proposed project are minimal and are not cumulatively considerable. The proposed project would have a less than significant cumulative impact with regard to TACs.

Effects on Sensitive Receptors

This section discusses the following CEQA Checklist question:

Would the project expose sensitive receptors to substantial pollutant concentrations?

Significance Threshold

The proposed project would result in a significant impact if it would expose sensitive receptors to substantial pollutant concentrations.

Impact Analysis

Construction activities occurring over an 18-month period as shown in Table 3.2-6, would emit criteria air pollutants in quantities that would exceed thresholds of significance. These emissions would be attributable to off-road construction equipment and on-road haul truck exhaust. Construction activities near sensitive receptors would be temporary and would be subject to Mitigation Measures AQ-1 through AQ-9 that would minimize vehicle exhaust and fugitive dust emissions. Effects to sensitive receptors would be less than significant with implementation of Mitigation Measures AQ-1 through AQ-9.

Operational emissions for the proposed project would be generated primarily from on-road vehicular traffic. Minimal employee trips would be required for daily routine operations and inspection/maintenance of the pipeline and reservoir. Emissions associated with operation of the proposed project would have a less-than-significant effect on sensitive receptors.

Toxic Air Contaminants.

The primary TAC generated by the project would be diesel particulate matter (DPM) that is generated by diesel equipment during construction. A Health Risk Assessment (HRA) of the effects of DPM was conducted and is included in Appendix C. The HRA determined that there would be a maximum incremental cancer risk of 8.2 in a million from the DPM emissions and this level is below the SCAQMD significance threshold of 10 in one million. (See the HRA in Appendix C-2). The analysis also found that the risk from chronic effects of DPM would be below the SCAQMD significance threshold for chronic risk. The Hazard Index threshold is 1.0 and the project Hazard Index would be 0.09. As such, the proposed project would not release substantial amounts of toxic contaminants or affect carcinogenic or chronic risks, and no significant impacts to human health would occur.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. The proposed project would not expose sensitive receptors to substantial criteria pollutant concentrations nor would there be substantial impacts from TACs. The proposed project impacts would be less than significant.

Odor Impacts

This section discusses the following CEQA Checklist question:

Would the project create objectionable odors affecting a substantial number of people?

Significance Threshold

The proposed project would result in a significant impact if it would expose a substantial number of people to objectionable odors.

Impact Analysis

According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses identified by the SCAQMD as being associated with odors. There are also no other known odor sources associated with the proposed project that could result in a substantial number of odor complaints.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. The project does not include any land uses identified by the SCAQMD as being associated with odors.

Greenhouse Gas Emissions

This section discusses the potential for greenhouse gas emissions caused by the proposed project to conflict with the state goal of reducing greenhouse gas emissions in California to 1990 levels by 2020, as set forth by the timetable established in AB 32, California Global Warming Solutions Act of 2006.

Significance Threshold

The proposed project would result in a significant impact if it would generate greenhouse gases in quantities that would conflict with state greenhouse gas emission reduction goals and thereby potentially contribute significantly to Global Climate Change.

Impact Analysis

As with other individual relatively small projects (i.e., projects that are not cement plants, oil refineries, electric generating facilities/providers, co-generation facilities, or hydrogen plants or other stationary combustion sources that emit more than 25,000 metric tons CO_2E/yr), project specific emissions would not be expected to individually have a significant impact on global climate change (AEP, 2007). However, the State of California has set goals of reducing emissions of greenhouse gasses to 1990 levels by the year 2020. If the proposed project conflicted with these state goals for reducing greenhouse gas emissions, emissions would be considered significant.

Three types of analyses are used in this analysis to determine whether the proposed project could be in conflict with the state goals for reducing greenhouse gas emissions. The analyses are reviews of:

A. The potential conflicts with the CARB's thirty-nine (39) recommended actions in the Climate Change Scoping Plan (see Table 3.2-3);

B. The relative size of the project in comparison to the estimated greenhouse reduction goal of 169 $MMTCO_2E$ by 2020, the comparison to the size of major facilities that are required to report greenhouse gas emissions (25,000 metric tons of CO_2E/yr); and

C. The basic parameters of a project to determine whether its design is inherently energy efficient.

With regard to Item A, the proposed project does not pose any apparent conflict with the recommended actions in the Climate Change Scoping Plan (see Table 3.2-3).

With regard to Item B, proposed project construction greenhouse gas emissions would be approximately 3,650 metric tons of CO_2E/yr in the maximum year, as computed by URBEMIS2007 (see **Table 3.2-6**). Operational emissions for the proposed project would not increase from current conditions and thus would not conflict with the state goal of reducing greenhouse gas emissions to 1990 levels by 2020 nor exceed the SCAQMD GHG threshold.

With regard to Item C, the proposed project would reduce energy consumption at the Crafton Hills Pump Station during peak demand periods and may reduce the need for electricity generation at peaking plants to provide energy to the existing pump stations.

The review of Items A, B, and C indicates that the proposed project would not conflict with the state goals of AB 32, and impacts would be less-than-significant.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. The proposed project would not conflict with state goals for reducing greenhouse gas emissions.

3.2.4 Mitigation Measure Summary Table

Table 3.2-7 presents the impacts and mitigation summary for Air Quality.

TABLE 3.2-7
AIR QUALITY IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance after Mitigation
Consistency with AQMPs: The proposed project would not conflict with or obstruct implementation of the applicable air quality plan with incorporation of mitigation measures.	AQ-1 through AQ-9	Less than significant
Violation of an Air Quality Standard: The proposed project would emit air pollutants in daily quantities that could exceed SCAQMD significance thresholds during the short-term duration of construction.	AQ-1 through AQ-9	Significant and unavoidable
Cumulative Air Emissions: Pollutant emissions associated with the proposed project would result in an adverse impact to cumulative air quality.	AQ-1 through AQ-9	Significant and unavoidable
Effects on Sensitive Receptors: Project operation would not violate air quality standards or contribute substantially to an existing or projected air quality violation nor expose sensitive receptors to pollutant concentrations resulting in an adverse health effect during long-term operation.	None required	Less than significant
Odor Impacts: The proposed project would not create objectionable odors affecting a substantial amount of people.	None required	Less than significant

TABLE 3.2-7
AIR QUALITY IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance after Mitigation
Greenhouse Gas Emissions: The proposed project would not conflict with state goals for reducing greenhouse gas emissions.	None required	Less than significant

3.3 Biological Resources

This chapter describes the biological resources within, and in the vicinity of, the project area, as well as potential impacts on those resources. A primary source of information for this chapter is the *Biological Technical Report and Focused Plant Survey Report* by Chambers Group Inc. (2008), which is included in **Appendix D**.

3.3.1 Regulatory Framework

Special-Status Species

Federal Endangered Species Act

The U.S. Fish and Wildlife Service (USFWS) in the Department of the Interior, and the National Marine Fisheries Service (NMFS) under the National Oceanic and Atmospheric Administration (NOAA) in the Department of Commerce share responsibility for administration of the federal Endangered Species Act (FESA). The FESA provides broad protection for species of fish, wildlife and plants that are listed as threatened or endangered in the United States or elsewhere. The FESA has four major components: 1) provisions are made for listing species, 2) requirements for federal agency consultation with USFWS or NMFS, 3) prohibitions against taking of listed species, and 4) the provisions for permits that allow incidental take of listed species for otherwise lawful activities. The FESA also requires the preparation of recovery plans and the designation of critical habitat for listed species.

The Migratory Bird Treaty Act of 1918

The Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or take any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. Take is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the Migratory Bird Treaty Act.

California Endangered Species Act

The California Endangered Species Act (CESA) is similar to the main provisions of the FESA and is administered by the California Department of Fish and Game (CDFG). Unlike its federal counterpart, CESA applies the take prohibitions to not only listed threatened and endangered species, but also to state candidate species for listing. Section 86 of the Fish and Game Code defines "take" as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The CDFG maintains lists for Candidate-Endangered Species and Candidate-Threatened Species, which have the same protection as listed species. Under CESA the term "endangered species" is defined as a species of plant, fish, or wildlife, which is "in serious danger of becoming extinct throughout all, or a significant portion of its range" and is limited to species or subspecies native to California.

Clean Water Act Section 404

Wetlands are generally considered to be areas that are periodically or permanently inundated by surface or ground water, and support vegetation adapted to life in saturated soil. Wetlands are recognized as important features on a regional and national level due to their high inherent value to fish and wildlife, use as storage areas for storm and floodwaters, and water recharge, filtration, and purification functions. Technical standards for delineating wetlands have been developed by the Corps which generally define wetlands through consideration of three criteria: hydrology, soils, and vegetation. Under Section 404 of the Clean Water Act (CWA), the Corps is responsible for regulating the discharge of dredged or fill material into waters of the United States. The term "waters" includes wetlands and non-wetland bodies of water that meet specific criteria as defined in the Code of Federal Regulations. All three of the identified technical parameters must be met for an area to be identified as a wetland under Corps CWA Section 404 jurisdiction, unless the area has been modified by human activity. In general, a permit must be obtained before the discharge of dredged or fill material can be placed in wetlands or other waters of the United States. The Corps at its discretion issues several types of permits (Nationwide, Individual, or General) depending on the acreage and purpose of discharge of fill or dredged material into waters of the United States.

Clean Water Act Section 401 Certification or Waiver, and State Discharge Permit under the Porter-Cologne Act

The State of California (State) regulates water quality related to discharge of fill material into waters of the State pursuant to Section 401 of the CWA. Section 401 compliance is a federal mandate regulated by the State. The local Regional Water Quality Control Boards (RWQCBs) have jurisdiction over all those areas defined as jurisdictional under Section 404 of the CWA. Where a 404 permit is required, a 401water quality certification from the RWQCB is also required.

In addition, the State regulates water quality for all waters of the State, that may also include isolated wetlands as defined under the California Porter-Cologne Water Quality Control Act (Porter Cologne; Ca. Water Code, Div. 7, §13000 et seq.). The State 401 Certification Program regulates all discharges that can affect water quality, even if there is no significant nexus to a traditional navigable water body required for Corps determination of jurisdiction over waters of the United States. In such instances, a Waste Discharge Permit is required even though federal CWA Section 401 water quality certification or 404 permits are not required.

Section 1602 Lake and Streambed Alteration Agreement

Jurisdictional authority of the CDFG over the bed, bank, or channel of a river, stream, or lake is established under Section 1600 *et. seq.* of the Fish and Game Code, which pertains to activities that would disrupt the natural flow or alter the channel, bed, or bank of any lake, river, or stream. The Fish and Game Code stipulates that it is unlawful to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream, or lake resulting in a substantial effect on a fish or wildlife resource without notifying the CDFG and completing the Streambed Alteration Agreement process.

3.3.2 Setting

Methodology

Vegetation types and wildlife habitats are characterized on the basis of both existing published data and records and recent field observations by Chambers Group Inc., Stephen Montgomery, and Environmental Science Associates (ESA) as specified within this paragraph. A biological reconnaissance-level survey of the proposed project corridor was conducted on June 15, 2007, and focused plant surveys were conducted on July 16 and 17, 2007. These results are discussed in the *Biological Technical Report* (Chambers Group Inc., 2008; see Appendix D). An additional focused plant survey of the reservoir enlargement site and focused plant surveys of the supplemental borrow areas and staging areas were conducted by ESA on April 2, 2008 and June 13, 2008. Two nighttime, spotlight surveys for amphibians were conducted by ESA at the existing reservoir on April 3, 2008 and June 13, 2008. The surveys were designed to gather background information on vegetative communities, wildlife habitats and habitat use, and wetlands within and adjacent to the proposed project areas, and to verify the results of previous surveys and reports. Vegetation types and wildlife habitats were mapped during the surveys and through interpretation of aerial photography. Prior to the surveys, the following sources were consulted for information on biological resources within the proposed project area:

- special-status species records from the California Natural Diversity Database (CNDDB, 2007);
- special-status plant records from the California Native Plant Society Electronic Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2007);
- USFWS list of potential threatened or endangered Species for the study area; and
- trapping results for San Bernardino kangaroo rat (Montgomery, 2007).

Descriptions of plant communities in the project area generally follow the vegetation classification systems of the Holland (1986) and Sawyer and Keeler-Wolf (1995). In some cases, vegetation patterns were mapped at a finer scale where it was appropriate for the purpose of evaluating habitat suitability and quality for special-status species

Regional Setting

The proposed project would be located in the Crafton Hills and vicinity. The reservoir enlargement area would be located within the boundaries of the City of Yucaipa, and the proposed connector pipeline would run through the Cities of Yucaipa and Redlands and the County of San Bernardino. The San Bernardino National Forest is north and east of the proposed project, and the City of Redlands and community of Mentone are to the west. The project includes four distinct sites: the proposed pipeline, the existing Crafton Hills Reservoir, the proposed reservoir enlargement site located at and adjacent to the existing Crafton Hills Reservoir, and the proposed borrow areas and staging areas (see Figure 2-2). The proposed pipeline is within the elevation range of 2,540 to 2,660 feet amsl, while the existing reservoir, reservoir enlargement area, and borrow/staging areas are within the elevation range of 2,800 to 2,990 feet amsl.

The impact area for the proposed pipeline would cover approximately 20.3 acres and would be constructed parallel to and north of Mill Creek Road (California State Route 38) for a total distance of approximately ½ mile through fire-recovering mature Riversidean alluvial fan sage scrub (RAFSS) habitat. The reservoir enlargement site, borrow areas, and staging areas are located within 26 acres of chaparral and grassland habitats. The existing reservoir covers approximately 7.8 acres and the proposed reservoir enlargement would cover approximately 19 acres.

Local Setting

Vegetation and Wildlife Habitats

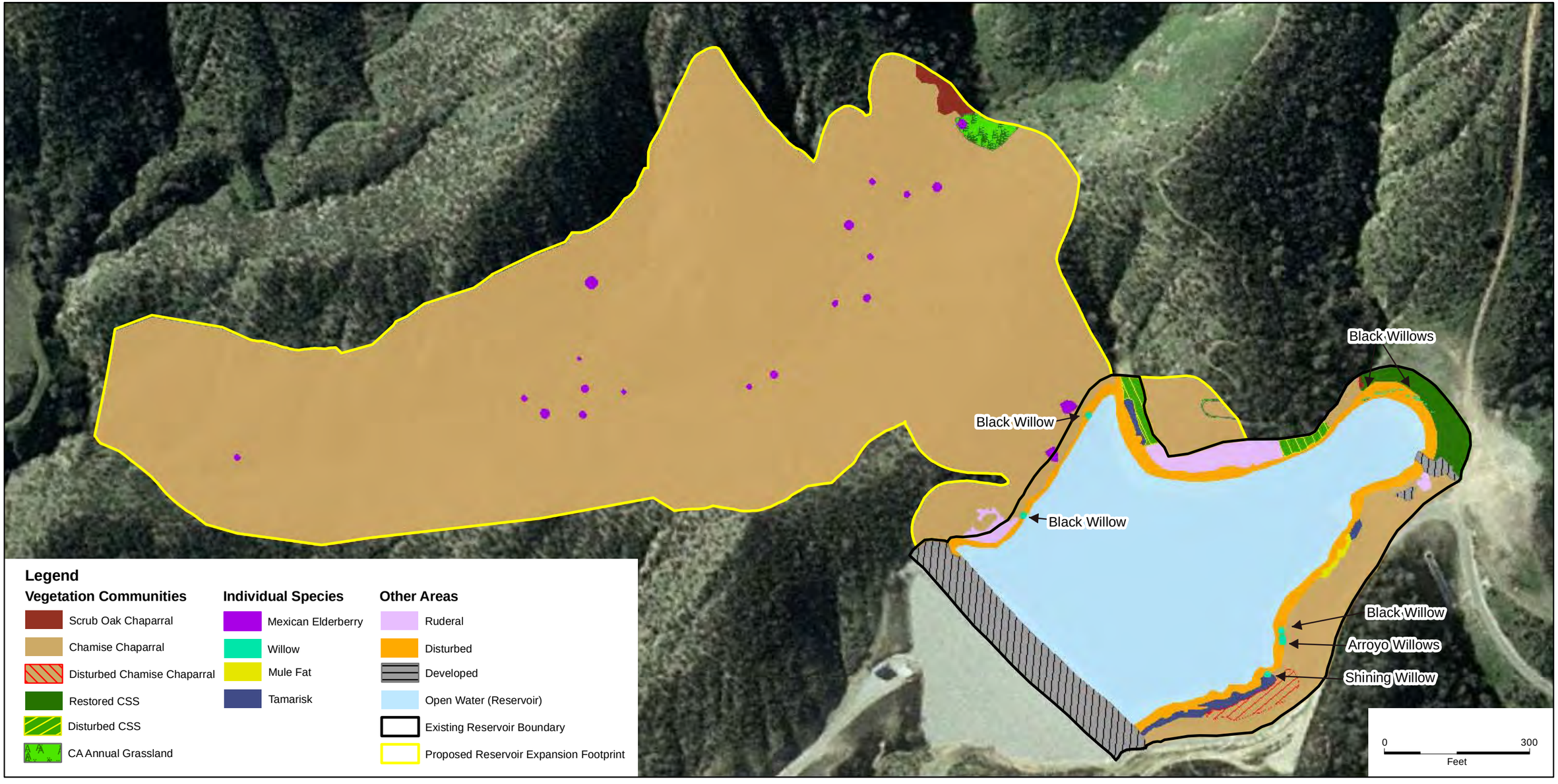
Following is a list of vegetation types within the project area, descriptions for each can be found in the Crafton Hills Biological Technical Report (Chambers Group, Inc., 2008). The land cover of each vegetation type within the project area is shown in **Figures 3.3-1** and **3.3-2**.

- Riversidean Alluvial Fan Sage Scrub (RAFSS)
- California Buckwheat Alluvial Fan Association (CBAFA)
- Chamise Chaparral/Disturbed Chamise Chaparral
- Scrub Oak Chaparral
- Coastal Sage Scrub/Disturbed Coastal Sage Scrub (CSS)
- Mexican Elderberry Series
- Mule Fat Scrub
- Tamarisk Series
- Willow Trees
- Non-native Annual Grasslands
- Open Water (Existing Reservoir)
- Riparian Scrub
- Ruderal Vegetation
- Disturbed/Developed

Proposed Pipeline

Vegetation

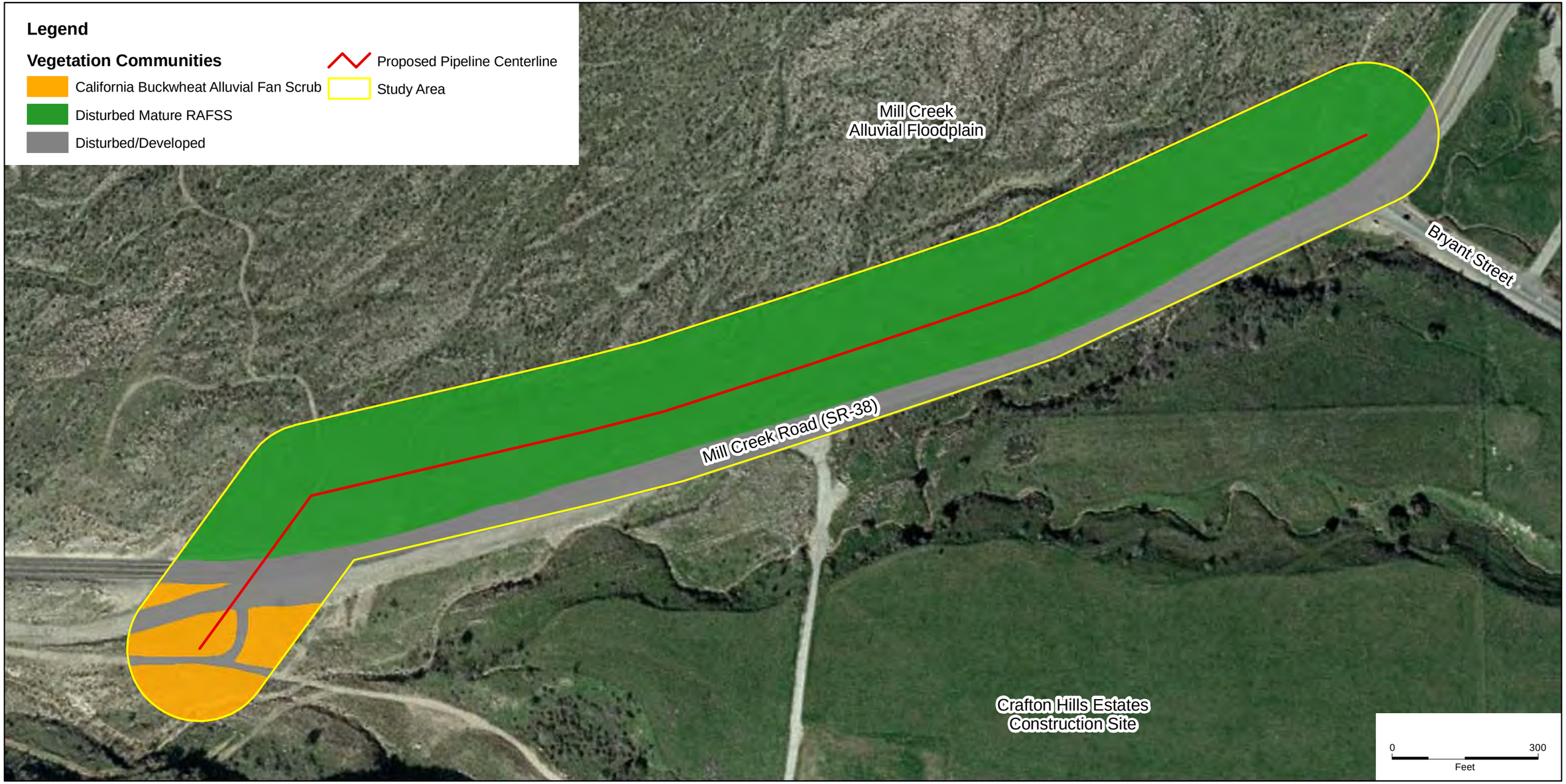
The proposed pipeline project site is composed of approximately 20.3 acres. RAFSS occupies approximately 14.8 acres of this area along the north side of Mill Creek Road. California Buckwheat Alluvial Fan Association occupies approximately 1.4 acres of this area along the south side of Mill Creek Road. Plant species found along the proposed pipeline include chamise (*Adenostoma fasciculatum*), California buckwheat (*Eriogonum fasciculatum*), brittlebush (*Encelia farinosa*), and wild oat (*Avena fatua*). Other species common in these communities include cheatgrass (*Bromus tectorum*), chaparral whitethorn (*Ceanothus leucodermis*), short-pod mustard (*Hirschfeldia incana*), scalebroom (*Lepidospartum squamatum*), deerweed (*Lotus scoparius*), spiny redberry (*Rhamnus crocea*), white sage (*Salvia apiana*), fescue (*Vulpia myuros*), and Our Lord's candle (*Yucca whipplei*).



SOURCE: Chambers, 2008.

DWR - Crafton Reservoir . 206008.04

Figure 3.3-1
Vegetation Communities
Reservoir Enlargement Area



SOURCE: Chambers, 2008.

DWR - Crafton Reservoir . 206008.04

Figure 3.3-2
Vegetation Communities
Connector Pipeline Area

Developed and disturbed areas compose 4.1 acres of the proposed pipeline project area. Developed and disturbed areas within the proposed pipeline project area include a portion of Mill Creek Road that intersects the study area and other dirt roads that split from Mill Creek Road within the study area. South of the proposed pipeline site, grading and construction are currently underway for a housing development.

Common Wildlife

Fourteen wildlife species, including reptiles, birds, and mammals, were detected during field surveys conducted at the proposed pipeline site. The two reptile species detected during the surveys were the western fence lizard (*Sceloporus occidentalis*) and long nosed snake (*Rhinocheilus lecontei*).

Eight bird species were detected at the proposed pipeline site: Anna's hummingbird (*Calypte anna*), Say's phoebe (*Sayornis saya*), western scrub-jay (*Aphelocoma californica*), common raven (*Corvus corax*), wrentit (*Chamaea fasciata*), phainopepla (*Phainopepla nitens*), California towhee (*Pipilo crissalis*), and spotted towhee (*Pipilo maculatus*).

Four mammal species were detected at the proposed pipeline site: desert cottontail (*Sylvilagus audubonii*), coyote (*Canis latrans*), domestic dog (*Canis familiaris*), and mule deer (*Odocoileus hemionus*).

In addition, small rodent burrows were observed throughout the site, and thus a number of small mammal species are expected to occur on-site. Rodent trapping was conducted along the proposed pipeline corridor (Montgomery, 2007). No special-status rodents were encountered during trapping surveys.

Special-Status Species

There were no federally listed, state listed, or special-status plant species observed within the proposed pipeline project site during both the reconnaissance survey and the focused plant survey.

There were no special-status wildlife species detected at the proposed pipeline site. However, due to the presence of some suitable habitat on-site, the Southwestern willow flycatcher (*Empidonax traillii extimus*), coastal California gnatcatcher (*Polioptila californica californica*), silvery legless lizard (*Anniella pulchra pulchra*), orange-throated whiptail (*Aspidoscelis hyperythra*), San Bernardino Mountain kingsnake (*Lampropeltis zonata parvirubra*), coast horned lizard (*Phrynosoma coronatum blainvillii*), Cooper's hawk (*Accipiter cooperii*), southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), burrowing owl (*Athene cunicularia*), Lawrence's goldfinch (*Carduelis lawrencei*), California horned lark (*Eremophila alpestris actia*), loggerhead shrike (*Lanius ludovicianus*), pallid bat (*Antrozous pallidus*), northwestern San Diego pocket mouse (*Chaetodipus [Perognathus] fallax fallax),* California western mastiff bat (*Eumops perotis californicus*), pocketed free-tailed bat (*Nyctinomops ferorosaccus*), and American badger (*Taxidea taxus*) all have some potential to occur at the proposed pipeline site.

Existing Reservoir

Vegetation

The existing reservoir is made up of approximately 7.8 acres, including 4.5 acres of open water and 1.4 acres of developed and disturbed area that include concrete reservoir structures and high water mark areas. Vegetation observed in these areas consisted of ruderal weedy herbaceous species, such as Italian thistle (*Carduus pycnocephalus*), tocalote (*Centaurea melitensis*), and short-pod mustard.

The remaining 2.9 acres surrounding the reservoir present an ideal location for plants to grow. Several plant species were observed on-site including chamise, golden yarrow (*Eriophyllum confertiflorum*), hoaryleaf ceanothus (*Ceanothus crassifolius)*, brittlebush, California sagebrush (*Artemisia californica*), California buckwheat, deerweed, black sage (*Salvia mellifera*), purple needlegrass (*Nassella pulchra*) and heartleafed penstemon (*Keckiella cordifolia*). These species were also observed growing in low densities with non-native weedy species, such as ripgut grass (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), foxtail chess (*Bromus rubens*), cheatgrass, and wild oat.

Common Wildlife

Thirty-six species of wildlife were detected at Crafton Hills Reservoir; common wildlife species detected at the existing reservoir site include fish, reptiles, birds, and mammals. One fish species, mosquito fish (*Gambusia affinis*), was observed in the reservoir. Two amphibians, the California toad (*Bufo boreas halophilus*) and Pacific tree frog (*Pseudacris regilla*) and three reptile species, western fence lizard, common side-blotched lizard (*Uta stansburiana*), and the California kingsnake (*Lampropeltis getula californiae*), were detected at the reservoir site.

Twenty-five bird species were detected at the existing reservoir site. These included water-associated species, such as mallard (*Anas platyrhyncos*) and killdeer (*Charadrius vociferous*), as well as red-tailed hawk (*Buteo jamaicensis*), Cassin's kingbird (*Tyrannus vociferans*), and wrentit. The complete list of species detected is provided in Appendix D.

Five mammal species were detected at the existing reservoir site. These included desert cottontail, desert woodrat (*Neotoma lepida*), coyote, raccoon (*Procyon lotor*), and bobcat (*Lynx rufus*).

Special-Status Species

There were no federally and/or state threatened and/or endangered plant species or otherwise special-status plant species observed within the existing reservoir site during the reconnaissance survey or the focused plant survey.

Four special-status wildlife species were detected at the existing reservoir site. These included the doublecrested cormorant (*Phalacrocorax auritus*), osprey (*Pandion haliaetus*), Cooper's hawk, and Lawrence's goldfinch. All four species appeared to use the reservoir for foraging purposes, and Lawrence's goldfinch may potentially breed at this site.

Other species with some potential to occur at this site due to the presence of suitable habitat include the Southwestern willow flycatcher, silvery legless lizard, orange-throated whiptail, San Bernardino Mountain kingsnake, coast horned lizard, southern California rufous-crowned sparrow, burrowing owl, California horned lark, loggerhead shrike, pallid bat, northwestern San Diego pocket mouse, California western mastiff bat, pocketed free-tailed bat, and American badger. More information on these species is provided later in this section.

Proposed Reservoir Enlargement Site

Vegetation

Four vegetation communities were observed in the approximately 19-acre reservoir enlargement site. These communities include Chamise Chaparral Series, Non-native Annual Grassland, Mexican Elderberry Series, and Scrub Oak Chaparral.

Chamise Chaparral Series covers approximately 19 acres of the proposed reservoir enlargement area. Common plant species found within the chamise series on the project site include chamise, bigberry manzanita (*Arctostaphylos glauca*), California sagebrush , hoaryleaf ceanothus, sugar bush (*Rhus ovata*), brittlebush, California buckwheat, deerweed, holly-leaved cherry (*Prunus ilicifolia*), and black sage.

Non-native Annual Grasslands cover 0.09 acres of the proposed reservoir enlargement area. This community type is located on the western side of the site adjacent to the riparian scrub. Brome grasses, such as ripgut grass, soft chess, foxtail chess, cheatgrass, and wild oat, dominate this community. Other species observed on-site include common goldenstar (*Bloomeria crocea*), Plummer's mariposa lily (*Calochortus plummerae)*, California peony (*Peonia californica*), and Malpais bluegrass (*Poa secunda*).

Scrub Oak Chaparral covers approximately 0.07 acres on the west edge of the proposed reservoir enlargement site. This community type is dominated by scrub oak. Other species typical of scrub oak chaparral that were observed on-site include chamise, birchleaf mountain-mahogany, toyon (*Heteromeles arbutifolia*), holly-leafed cherry, and skunkbrush (*Rhus trilobata*).

Mexican Elderberry Series covers approximately 0.06 acres of the reservoir enlargement site. Mexican elderberry shrubs occur primarily at the base of the Chamise Chaparral hillside areas, largely on the northern end of the proposed enlargement site.

Common Wildlife

Thirty-four wildlife species were seen during sight visits to the enlargement site; common wildlife species detected at the proposed reservoir enlargement site included reptiles, birds, and mammals. The common side-blotched lizard and the western fence lizard were the only two reptile species detected on-site.

Twenty-seven bird species were seen during site visits to the proposed reservoir enlargement site, including red-tailed hawk, California quail (*Callipepla californica*), bushtit (*Psaltriparus*

minimus), and phainopepla. The complete list of species detected is provided in Appendix B of the Biological Technical Report in Appendix D.

Five mammal species were seen during site visits to the proposed reservoir enlargement site, including desert cottontail, desert woodrat, coyote, bobcat, and domestic horse (*Equus caballus*).

Special-Status Species

The reconnaissance-level biological surveys conducted during the flowering period for Plummer's mariposa lily, a CNPS 1B.2 special-status plant species, identified the plant at six locations within the reservoir enlargement site; one to three plants were observed at each location.

For all other federal- and state-listed plant species with some potential to occur onsite, the persistent vegetation was sufficient to identify specimens to the species level at the time of the focused plant survey. No federal- or state-listed plant species were found during the focused plant survey. Therefore, Section 7 Consultation under the Endangered Species Act would not be necessary for plant species at the proposed reservoir enlargement site. No additional plant surveys would be required.

The southern California rufous-crowned sparrow was the only special-status wildlife species identified within the reservoir enlargement site. Other species with some potential to occur at this site due to the presence of suitable habitat include the silvery legless lizard, orange-throated whiptail, San Bernardino Mountain kingsnake, coast horned lizard, Cooper's hawk, burrowing owl, Lawrence's goldfinch, California horned lark, loggerhead shrike, pallid bat, northwestern San Diego pocket mouse, California western mastiff bat, pocketed free-tailed bat, Los Angeles pocket mouse, and American badger.

Supplemental Borrow and Staging Areas

Vegetation

There are four areas considered for supplemental borrow and staging areas (Figure 2-2). The two Mill Creek Road staging areas are highly disturbed by vehicular traffic; vegetation is sparse and ruderal. Vegetation at the supplemental borrow and staging areas (including the load restricted staging area) located along the existing access road, is predominantly non-native annual grassland with a mix of brome grasses, such as ripgut brome, soft chess, foxtail chess, and cheatgrass, along with wild oat, buckwheat, and mustard. The steep north facing slopes that border this area to the south contain dense chaparral similar to that described for the reservoir enlargement site. Species observed on these slopes include chamise, bigberry manzanita, hoaryleaf ceanothus, sugar bush, holly-leaved cherry, toyon and scrub oak. The area adjacent to the existing reservoir is highly disturbed by vehicular traffic, and sparsely vegetated by ruderal and non-native grassland species. The western portion of this area consists of disturbed chamise chaparral as described for the existing reservoir.

Special-Status Species

There were no federally listed, state listed, or special-status plant species observed within the supplemental borrow/staging areas during the focused plant survey.

Due to the presence of some suitable habitat on-site, the Southwestern willow flycatcher, silvery legless lizard, orange-throated whiptail, San Bernardino Mountain kingsnake, coast horned lizard, Cooper's hawk, southern California rufous-crowned sparrow, burrowing owl, Lawrence's goldfinch, California horned lark, loggerhead shrike, pallid bat, northwestern San Diego pocket mouse, California western mastiff bat, pocketed free-tailed bat, and American badger all have some potential to occur at the supplemental borrow/staging areas.

Wildlife Movement Corridors

The concept of habitat corridors addresses the linkage between large blocks of habitat that allows the safe movement of mammals and other wildlife species from one habitat area to another. The definition of a corridor is varied, but corridors may include greenbelts, refuge systems, underpasses, and biogeographic landbridges, among others. In general, a corridor is described as a linear habitat, embedded in a dissimilar matrix that connects two or more large blocks of habitat.

Wildlife movement corridors are critical for the survivorship of ecological systems for several reasons. Corridors can connect water, food, and cover sources, spatially linking these three resources with wildlife in different areas. In addition, wildlife movement between habitat areas provides for the potential of genetic exchange between wildlife species populations, which maintains genetic variability and adaptability. This exchange maximizes the success of wildlife species in response to changing environmental conditions; an especially critical factor for small populations subject to loss of variability from genetic drift and the effects of inbreeding.

Drainages generally serve as movement corridors because wildlife can move easily through these areas. Corridors also offer wildlife unobstructed terrain for foraging and for the dispersal of young individuals. Due to the protective cover afforded by dense vegetation, movement corridors along drainages are particularly important to larger terrestrial species, such as mountain lion (*Felis concolor*), coyotes, bobcats, and mule deer.

The Crafton Hills area and the surrounding foothills serve as important habitat movement corridors for wildlife in the area of the project site. The project site is surrounded by open space and light residential development land uses. A number of species known to use wildlife corridors, including coyote and bobcat, have been detected within this area.

Jurisdictional Waters and Wetlands

A wetland delineation and jurisdictional determination for the project area were conducted by Chambers Group, Inc. (2008b) (see **Appendix E**). The report identified the wetlands and other water or drainage features that fall under the jurisdiction of three agencies: the U.S. Army Corps of Engineers (Corps or USACE), the RWQCB, and CDFG. The determinations are made based on the USACE Arid West Supplement (USACE, 2007) to the 1987 Wetland Manual (USACE, 1987), the SWANCC decision, and the recent Corps-EPA "Rapanos" guidance.

Wetlands considered waters of the U.S. are defined as those areas inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal

circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR Part 328). No such wetlands were found within the proposed project area. However, other non-wetland jurisdictional drainages and streambed areas were found.

Existing Crafton Hills Reservoir and Proposed Enlargement Area

The existing Crafton Hills Reservoir is a Relatively Permanent Water (RPW) impoundment and therefore, by definition, is considered to be waters of the U.S., even though the water that fills the reservoir is pumped in artificially. Incidental seepage from the existing dam and reservoir is largely pumped back into the reservoir, although some seepage flows into the unnamed ephemeral drainage below the existing dam. This ephemeral drainage connects to Lake 2 at Yucaipa Regional Park, which is considered a Traditional Navigable Water (TNW) (Chambers Group, Inc., 2008b). Thus, the existing Crafton Hills Reservoir (5.32 acres) is likely under the jurisdiction of USACE.

Another unnamed ephemeral drainage (non-RPW) bisects the proposed reservoir enlargement area. The unnamed drainage connects to the downstream drainage of the existing reservoir and thus connects to Lake 2 at Yucaipa Regional Park. It has been determined that a significant nexus could exist between this drainage and Lake 2 (Chambers Group, Inc., 2008b). Due to this potential significant nexus between a non-RPW and a TNW (in accordance with the Rapanos decision), the jurisdictional determination report indicates that the unnamed drainage could fall under the jurisdiction of the USACE (Chambers Group, Inc., 2008b). A final decision regarding the jurisdictional nature of the reservoir enlargement area would be made by the USACE. At this time, it is assumed that 0.09 acres of the reservoir enlargement area could be under USACE jurisdiction.

The limits of RWQCB jurisdiction are defined by the Ordinary High Water Mark (OHWM). For the unnamed drainage that bisects the reservoir enlargement area, the OHWM is characterized by a weak bed-and-bank formation at the lowest elevations of the drainage. The existing reservoir and proposed enlargement area fall under the jurisdiction of the RWQCB because the sites could affect surface or subsurface water quality/quantity of waters of the State. The RWQCB has jurisdiction over the same acreage at the existing reservoir and proposed enlargement area as the USACE.

The limits of CDFG jurisdiction reach beyond the OHWM and there are slightly greater than RWQCB jurisdiction. At the existing Crafton Hills Reservoir, CDFG jurisdiction extends beyond the water line to the outer edges of the riparian vegetation surrounding the site. As a result, CDFG has jurisdiction over an additional 0.14 acres at the existing reservoir, for a total of 5.46 acres. The jurisdiction of CDFG at the proposed enlargement area is the same as RWQCB and USACE.

Proposed Connector Pipeline

The proposed connector pipeline site has one isolated ephemeral feature that has sufficient bed-and-bank formation to be considered a drainage (non-RPW). This drainage does not have a significant nexus with a RPW or TNW and is not considered to be waters of the U.S. based on the SWANCC and Rapanos decisions. Therefore, this drainage is assumed to be not under the

jurisdiction of USACE (Chambers Group, Inc., 2008b). A final decision regarding the jurisdictional nature of the ephemeral feature area will be made by the USACE.

The drainage is isolated from Mill Creek and other waters of the state, but since impacts to this isolated feature could affect water quantity or quality of the State, this drainage is still under the jurisdiction of the RWQCB. The RWQCB has jurisdiction over 0.02 acres of this drainage within the project impact area.

The jurisdiction of CDFG at this drainage extends approximately two feet to either side of the OHWM. Therefore, CDFG has jurisdiction over 0.03 acres of this drainage within the project impact area.

Summary of Jurisdictional Impacts

Table 3.3-1 summarizes the types and areas of jurisdictional waters for each project component. As proposed the project would permanently impact 0.09 acres and temporarily impact 5.32 acres that fall within the regulatory jurisdiction of the USACE. These impacts would require permits in accordance with Section 404 of the CWA.

TABLE 3.3-1
JURISDICTIONAL IMPACTS MATRIX (ACRES)

Authority	Wetland	Riparian	Reservoir	Other Waters	Total
USACE	0	0	5.32	0.09	5.41
RWQCB	0	0	5.32	0.11	5.43
CDFG	0	0.14	5.32	0.12	5.58

As proposed, the project would permanently impact 0.09 acres, and temporarily impact 5.34 acres that fall within the regulatory jurisdiction of the RWQCB. These impacts would require permits in accordance with Section 401 of the CWA and/or Waste Discharge Requirements from RWQCB in accordance with the Porter-Cologne Act.

As proposed, the project would permanently impact 0.09 acres and temporarily impact 5.49 acres that fall within the regulatory jurisdiction of CDFG and require permits in accordance with Section 1600 et seq of the Fish and Game Code.

Special-Status Species

Special-status plant and wildlife species include listed species, those listed as threatened, endangered, rare, or proposed/candidate endangered, by the USFWS or CDFG. In addition, special-status species include CDFG listed California Special Concern Species, and CNPS-listed plants. A special-status species is considered to potentially occur in the project area if its known geographic range includes part of the project area or adjacent parcels and/or if the general habitat requirements or environmental conditions required for the species are present within the corridors at the time of the survey. The potential for special-status species to occur was evaluated for the project site, incorporating the results of prior surveys as well as the reconnaissance-level surveys

conducted by Chambers in 2007 and ESA in 2008. Special-status species identified in previous surveys are shown in **Figure 3.3-3**.

For special-status species listed on Tables 3.3-2 and 3.3-3 the following criteria was used when evaluating the potential for occurrence at each site:

- Absent: Species was not observed during focused surveys conducted at an appropriate time for identification of the species, or species is restricted to habitats or environmental conditions that do not occur within the site.
- Assumed Absent: Species was not found during field surveys, and none or very low quality habitat exists onsite.
- Low: Historical records for this species do not exist within the immediate vicinity (approximately five miles) of the site, and/or habitats or environmental conditions needed to support the species are of poor quality.
- Moderate: Either (1) a historical record exists of the species within the immediate vicinity of the site (approximately five miles), and marginal habitat exists on the site; or (2) the habitat requirements or environmental conditions associated with the species occur within the site, but no historical records exist within the vicinity.
- High: A historical records exists of the species within the site or its immediate vicinity (approximately five miles), and the habitat requirements or environmental conditions associated with the species occur within the site.
- Present: Species was detected within the site at the time of the survey.

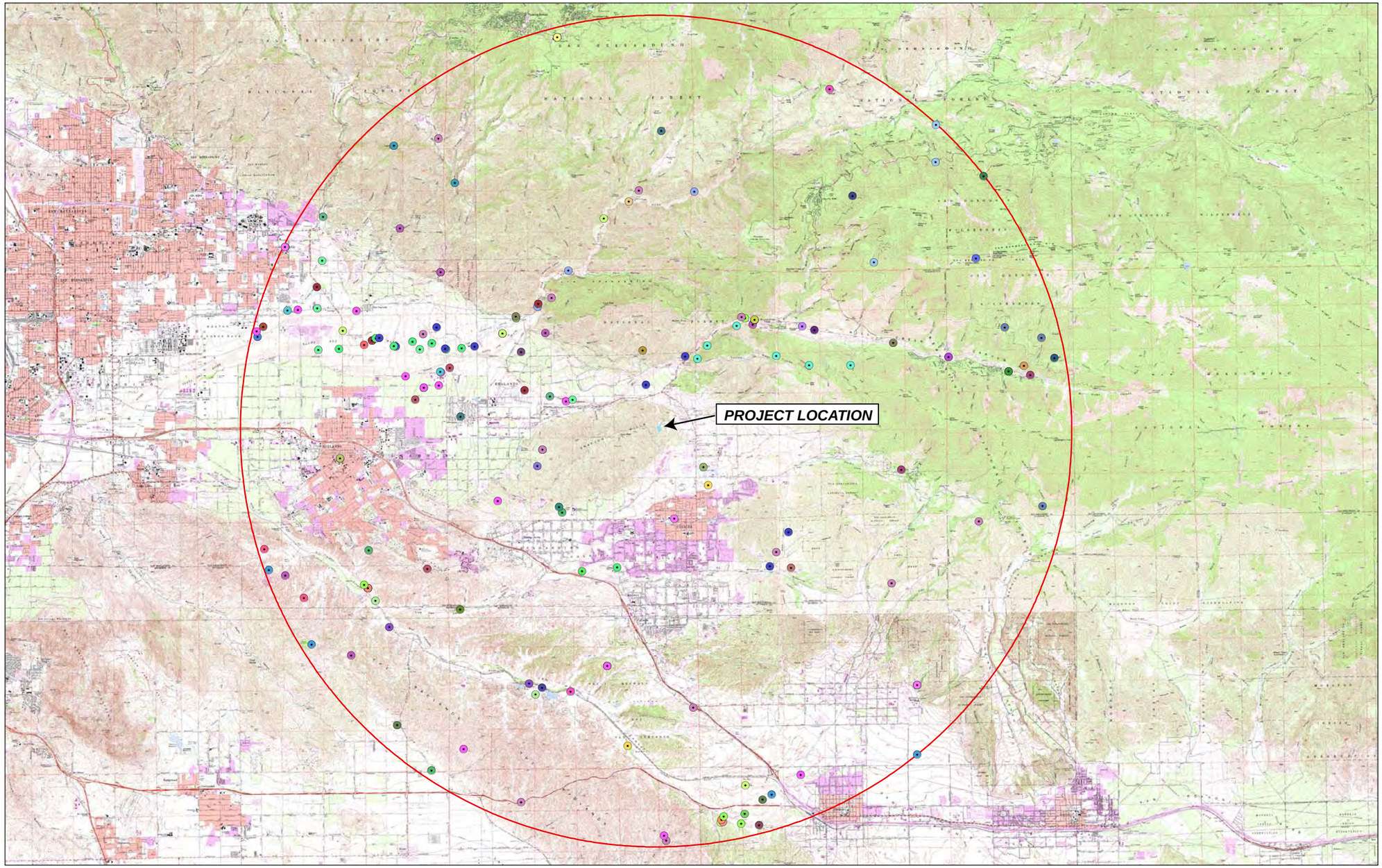
Special-Status Plants

A total of twenty special-status plant species are known to occur within the vicinity of the project site (CNDDB, 2007; CNPSEI, 2007). Five of the twenty special-status species are federal or state-listed species (**Table 3.3-2**). Federal and state-listed plant species, on-site occurrences, and potentials to occur at the three project locations are described below. As previously mentioned, the proposed pipeline is within the elevation range of 2,540 to 2,660 feet amsl, while the existing reservoir and reservoir enlargement are within the elevation range of 2,800 to 2,990 feet amsl.

Nevin's Barberry

Nevin's barberry (*Berberis nevinii*), a federally and state-listed endangered species, is an evergreen shrub that occurs in chaparral, cismontane woodlands, coastal scrub, and riparian scrub in sandy or gravelly soils at elevations between 970 and 2,703 ft amsl. The flowering period for this species is between March and April.

Suitable habitat for this species is present within the proposed pipeline site, the existing reservoir site, and the reservoir enlargement site; however, the proposed pipeline site is below its elevation range. Although the focused survey occurred after the flowering period for this species, it is a large perennial shrub identifiable year-round; therefore, the species is confirmed absent from all four proposed project areas.



- American badger
- California horned lark
- California mountain kingsnake (San Bernardino population)
- California satintail
- Canyon Live Oak Ravine Forest
- Cooper's hawk
- Hall's monardella
- Los Angeles pocket mouse
- Los Angeles sunflower
- Nevin's barberry
- Parish's alumroot
- Parish's bush-mallow
- Parish's checkerbloom
- Parish's yampah
- Parry's spineflower
- Plummer's mariposa-lily
- Riversidian Alluvial Fan Sage Scrub
- Robinson's pepper-grass
- San Bernardino Mountains owl's-clover
- San Bernardino aster
- San Bernardino flying squirrel
- San Bernardino gilia
- San Bernardino grass-of-Parnassus
- San Bernardino kangaroo rat
- San Bernardino ringneck snake
- San Diego black-tailed jackrabbit
- San Diego desert woodrat
- Santa Ana River woollystar
- Santa Ana speckled dace
- Sierra Madre yellow-legged frog
- Southern Coast Live Oak Riparian Forest
- Southern Cottonwood Willow Riparian Forest
- Southern Riparian Forest
- Southern Riparian Scrub
- Southern Sycamore Alder Riparian Woodland
- Southern Willow Scrub
- Stephens' kangaroo rat
- Yucaipa onion
- black swift
- burrowing owl
- coast (San Diego) horned lizard
- coastal California gnatcatcher
- coastal western whiptail
- haromonius halictid bee
- least Bell's vireo
- lodgepole chipmunk
- loggerhead shrike
- northwestern San Diego pocket mouse
- orange-throated whiptail
- pallid bat
- rock sandwort
- rosy boa
- silvery legless lizard
- slender-horned spineflower
- smooth tarplant
- southern California rufous-crowned sparrow
- southwestern willow flycatcher
- tricolored blackbird
- two-striped garter snake
- western mastiff bat
- western spadefoot
- western yellow bat
- yellow warbler
- yellow-breasted chat

SOURCE: USGS, 2007; CNDDB, 2008.

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Figure 3.3-3
Special-Status Species Occurrences within 10 Mile Radius of the Project Site

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TABLE 3.3-2
SPECIAL-STATUS PLANTS OBSERVED OR POTENTIALLY OCCURRING IN THE PROJECT AREA

Scientific Name **Common Name**	**Status**		**Flowering Period**	**Proposed Pipeline**	**Existing Reservoir**	**Proposed Reservoir Expansion**	**Borrow/Staging Area**
Federal and State-Listed Plant Species							
Berberis nevinii Nevin's barberry	USFWS: CDFG: CNPS: S-Rank: G-Rank:	**FE** **SE** 1B.1 S2.2 G2	Mar – Apr	A	A	A	A
Dodecahema leptoceras slender-horned spineflower	USFWS: CDFG: CNPS: S-Rank: G-Rank:	**FE** **SE** 1B.1 S1.1 G2	Apr – Jun	A	A	A	A
Eriastrum densiflorum* ssp. *sanctorum Santa Ana River woollystar	USFWS: CDFG: CNPS: S-Rank: G-Rank:	**FE** **SE** 1B.1 S1.1 G4T1	Jun – Sep	A	A	A	A
Sidalcea hickmanii* ssp. *parishii Parish's checkerbloom	USFWS: CDFG: CNPS: S-Rank: G-Rank	**FC** **Rare** 1B.2 S1.2 G3T1	Jun – Aug	A	A	A	A
Sidalcea pedata bird-foot checkerbloom	USFWS: CDFG: CNPS: S-Rank: G-Rank:	**FE** **SE** 1B.1 S1.1 G1	May – Aug	A	A	A	A
Other Special-Status Plant Species							
Calochortus plummerae Plummer's mariposa lily	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 1B.2 S3.2 G3	May – Jul	H	H	P	M
Castilleja lasiorhyncha *San Bernardino Mountains owl's clover*	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 1B.2 S2.2 G3	Jun – Aug	A	A	A	A
Centromadia pungens ssp. laevis *smooth tarplant*	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 1B.1 S2.1 G3G4T2	Apr – Sep	A	A	A	A
Chorizanthe parryi var. parryi *Parry's spineflower*	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 3.2 S2.1 G2T2	Apr – Jun	A	A	A	A

TABLE 3.3-2 (continued)
SPECIAL-STATUS PLANTS OBSERVED OR POTENTIALLY OCCURRING IN THE PROJECT AREA

Scientific Name **Common Name**	**Status**		**Flowering Period**	**Proposed Pipeline**	**Existing Reservoir**	**Proposed Reservoir Expansion**	**Borrow/Staging Area**
Heuchera parishii Parish's alumroot	USFWS: CDFG: CNPS: S-Rank: G-Rank	None None 1B.3 S2.3 G2	June – Aug	A	A	A	A
Imperata brevifolia California satintail	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 2.1 S2.1 G2	Sept – May	A	A	A	A
Ivesia argyrocoma silver-haired ivesia	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 1B.2 S2.2 G2	Jun – Aug	A	A	A	A
Lepidium virginicum* var. *robinsoni Robinson's pepper-grass	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 1B.2 S2.2 G5T2	Jan – Jul	M	M	M	L
Lilium parryi lemon lily	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 1B.2 S2.1 G3	Jul – Aug	A	A	A	A
Malacothamnus parishii Parish's bush mallow	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 1A SH GHQ	Jun – Jul	A	A	A	A
Monardella macrantha* ssp. *hallii Hall's monardella	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 1B.3 S3.3 G5T3	Jun – Aug	A	A	A	A
Perideridia parishii* ssp. *parishii Parish's yampah	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 2.2 S2.2 G4T3T4	Jun – Aug	A	A	A	A
Ribes divaricatum* var. *parishii Parish's gooseberry	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 1A SH G4TH	Feb – Apr	A	A	A	A
Streptanthus campestris southern jewel-flower	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 1B.3 S2.3 G2	May – Jul	A	M	M	L

TABLE 3.3-2 (continued)
SPECIAL-STATUS PLANTS OBSERVED OR POTENTIALLY OCCURRING IN THE PROJECT AREA

Scientific Name **Common Name**	**Status**		**Flowering Period**	**Proposed Pipeline**	**Existing Reservoir**	**Proposed Reservoir Expansion**	**Borrow/Staging Area**
Thelypteris puberula* var. *sonorensis Sonoran maiden fern	USFWS: CDFG: CNPS: S-Rank: G-Rank:	None None 2.2 S2.2 G5T3	Jan – Sep	A	A	A	A

NOTE: All species have been confirmed ABSENT from the proposed Citrus Reservoir and Citrus Pump Station

Federal designations: (Federal Endangered Species Act, USFWS):

FE: Federal-listed, endangered.
FT: Federal-listed, threatened.
PTH: Federal-listed, proposed-threatened
FC: Candidate species.

State designations: (California Endangered Species Act, CDFG)

SE: State-listed, endangered.
ST: State-listed, threatened.
Rare: State-listed as rare (Listed "Rare" animals have been re-designated as Threatened, but Rare plants have retained the Rare designation.)

California Native Plant Society (CNPS) designations: (Note: According to CNPS [Skinner and Pavlik 1994], plants on Lists 1B and 2 meet definitions for listing as threatened or endangered under Section 1901, Chapter 10 of the California Fish and Game Code. This interpretation is inconsistent with other definitions.

List 1A: Plants presumed extinct in California.
List 1B: Plants rare and endangered in California and throughout their range.
List 2: Plants rare, threatened or endangered in California but more common elsewhere in their range.
List 3: Plants about which we need more information; a review list.
List 4: Plants of limited distribution; a watch list.
List Extension 0.1: Seriously endangered in California (over 80% of occurrences threatened/ high degree and immediacy of threat)
List Extension 0.2: Fairly endangered in California (20-80% occurrences threatened)
List Extension 0.3: Not very endangered in California (<20% of occurrences threatened)

California Natural Diversity Database (CNDDB) Global (G) and State (S) ranking designations:

G1: Less than 6 viable element occurrences (EOs) OR less than 1,000 individuals OR less than
G2: 2,000 acres.
G3: 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres.
G4: 21-80 EOs OR 3,000-10,000 individuals OR 10,000-50,000 acres.
G5: Apparently secure; this rank is clearly lower than G3 but factors exist to cause some concern; (i.e., there is some threat, or somewhat narrow habitat).
Population or stand demonstrably secure to ineradicable due to being commonly found in the world.

GH: All sites are historical; the element has not been seen for at least 20 years, but suitable habitat still exists (SH = All California sites are historical).
GX: All sites are extirpated; this element is extinct in the wild (SX = All California sites are extirpated).
GXC: Extinct in the wild; exists in cultivation.
G1Q: The element is very rare, but there are taxonomic questions associated with it.
T: Applies to a subspecies or variety.

California Natural Diversity Database (CNDDB) Global (G) and State (S) ranking designations (cont.):

S1: Less than 6 EOs OR less than 1,000 individuals OR less than 2,000 acres
S2: 6-20 EOs OR 1,000-3,000 individuals OR 2,000-10,000 acres
S3: 21-80 EOs or 3,000-10,000 individuals OR 10,000-50,000 acres
S4: Apparently secure within California; this rank is clearly lower than S3 but factors exist to cause some concern; i.e., there is some threat, or somewhat narrow habitat. NO THREAT RANK.
S5: Demonstrably secure to ineradicable in California. NO THREAT RANK.
Extension 0.1: Very threatened
Extension 0.2: Threatened
Extension 0.3: No current threats known

TABLE 3.3-2 (continued)
SPECIAL-STATUS PLANTS OBSERVED OR POTENTIALLY OCCURRING IN THE PROJECT AREA

Potential for Occurrence designations:

A: Absent
L: Low Potential
M: Moderate Potential
H: High Potential
P: Present

SOURCES: CNDDB and California Native Plant Society Electronic Inventory (CNPSEI) for Yucaipa, Redlands, Harrison Mountain, and Keller Peak 7.5 minute USGS quadrangles, 2007.

Slender-Horned Spineflower

Slender-horned spineflower (*Dodecahema leptoceras*), a federally and state-listed endangered species, is an annual herb that occurs in chaparral, cismontane woodlands, and coastal sage scrub with sandy soils at elevations between 660 and 2,500 ft amsl. The flowering period for this species is between April and June.

The existing reservoir and the proposed reservoir enlargement area are above the elevation range for this species. Since the focused plant survey occurred immediately after the flowering period of this species, the modified survey protocol for this species involved on-site identification of dried perianths rather than flowers. Using this methodology, this species was not observed during the focused plant surveys; therefore, the species is confirmed absent from all four proposed project areas.

Santa Ana River Woollystar

Santa Ana River woollystar (*Eriastrum densiflorum* ssp. *sanctorum*), a federally and state-listed endangered species, is a perennial herb that occurs in open washes and early successional RAFSS or on open slopes above main watercourses with regular flooding and scouring events at elevations ranging from 490 to 2,000 ft amsl. The flowering period for this species is between June and September.

The existing reservoir and the proposed reservoir enlargement area are above the elevation range for this species. However, suitable habitat for this species is present within the proposed pipeline area. This species is identifiable year-round and was not observed during the focused plant surveys; therefore, it is confirmed absent from all four proposed project areas.

Parish's Checkerbloom

Parish's checkerbloom (*Sidalcea hickmanii* ssp. *parishii*), a federal candidate and state-listed rare species, is a perennial herb that occurs in chaparral, cismontane woodlands, and lower montane coniferous forests on serpentine soils at elevations between 3,280 and 7,020 ft amsl. The flowering period for this species is between June and August.

All three project areas are below the elevation range for this species, and suitable habitat within the project areas is lacking. In addition, this species was not observed during the focused plant surveys; therefore, this species is confirmed absent from all four proposed project areas.

Bird-Foot Checkerbloom

Bird-foot checkerbloom (*Sidalcea pedata*), a federally and state-listed endangered species, is a perennial herb that occurs in meadows, seeps, and pebble plains in mesic soils at elevations between 5,249 and 8,200 ft amsl. The flowering period for this species is between May and August.

All three project areas are below the elevation range for this species, and suitable habitat within the project areas is lacking. In addition, this species was not observed during the focused plant surveys; therefore, this species is confirmed absent from all four proposed project areas.

Plummer's Mariposa Lily

Plummer's mariposa lily (*Calochortus plummerae*), a CNPS list 1B.2 species, is an annual bulbiferous herb that occurs in chaparral, cismontane woodlands, coastal sage scrub, lower montane coniferous forest, and valley and foothill grasslands on granitic or rocky soils at elevations between 330 and 5,560 ft amsl. The flowering period for this species is between May and July.

This species was identified during the reconnaissance survey at six locations within the reservoir enlargement site; each location contained one to three plants in flower. While the species was not observed during the focused plant survey, the focused plant survey was performed late in its flowering period following a record drought in southern California; persistent vegetation of mariposa lilies is not generally identifiable to species level. Therefore, there is a high potential for this species to occur within the existing reservoir site and the proposed pipeline location, and a moderate potential to occur within the borrow/staging areas.

San Bernardino Mountains Owl's Clover

San Bernardino Mountains owl's clover (*Castilleja lasiorhyncha*), a CNPS list 1B.2 species, is an annual hemiparasitic herb that occurs in chaparral, meadows, seeps pebble plains, and mesic upper montane coniferous forest on mesic soils at elevations between 4,200 and 7,850 ft amsl. The flowering period for this species is between June and August.

The project sites are below the elevation range for this species and suitable habitat is lacking. It was not observed during the focused plant survey. Therefore, it is confirmed absent from all four proposed project areas.

Smooth Tarplant

Smooth tarplant (*Centromadia pungens* ssp. *laevis*), a CNPS list 1B.1 species, is an annual herb that occurs in chenopod scrub, meadows and seeps, playas, riparian woodlands, and valley and foothill grassland on alkaline soils at elevations between 0 and 1,575 ft amsl. The flowering period for this species is between April and September.

The existing reservoir and the proposed reservoir enlargement area are above the elevation range for this species and suitable habitat within the proposed pipeline area is lacking. In addition, this species was not observed during the focused plant surveys; therefore, it is confirmed absent from all four proposed project areas.

Parry's Spineflower

Parry's spineflower (*Chorizanthe parryi* var. *parryi*), a CNPS list 3.2 species, is an annual herb that occurs in open chaparral and coastal scrub habitats on sandy or rocky soils at elevations between 130 and 5,600 ft amsl. The flowering period for this species is between April and June.

Suitable habitat for this species is present within the proposed pipeline site and only in small areas of the existing reservoir and the reservoir enlargement sites. Since the focused plant survey occurred after the flowering period for this species, the modified survey protocol for this species involved on-site identification of dried perianths rather than flowers. Using this methodology, this species was not observed during the focused plant surveys; therefore, it is confirmed absent from all four proposed project areas.

Parish's Alumroot

Parish's alumroot (*Heuchera parishii*), a CNPS list 1B.3 species, is an annual rhizomatous herb that occurs in alpine boulder and rock fields, lower montane coniferous forests, subalpine coniferous forests, and upper montane coniferous forests on rocky and sometimes carbonate soils at elevations between 4,930 and 12,500 ft amsl. The flowering period for this species is between June and August.

All three project areas are below the elevation range for this species, and suitable habitat within the project areas is lacking. In addition, this species was not observed during the focused plant surveys; therefore, this species is confirmed absent from all four proposed project areas.

California Satintail

California satintail (*Imperate brevifolia*), a CNPS list 2.1 species, is an perennial rhizomatous herb that occurs in chaparral, coastal scrub, Mojave desert scrub, meadows and seeps, and riparian scrub on mesic alkaline soils at elevations between 0 and 1,640 ft amsl. The flowering period for this species is between September and May.

All three project areas are above the elevation range for this species, and this species was not observed during the focused plant surveys. Therefore, this species is confirmed absent from all four proposed project areas.

Silver-haired Ivesia

Silver-haired ivesia (*Ivesia argyrocoma*), a CNPS list 1B.2 species is, a perennial rhizomatous herb that occurs in meadows and seeps, pebble plains, and upper montane coniferous forests on mesic alkaline soils at elevations between 4,900 and 8,800 ft amsl. The flowering period for this species is between June and August.

All three project areas are below the elevation range for this species and suitable habitat within the project areas is lacking. In addition, this species was not observed during the focused plant surveys; therefore, this species is confirmed absent from all four proposed project areas.

Robinson's Pepper-Grass

Robinson's pepper-grass (*Lepidium virginicum* var. *robinsoni*), a CNPS list 1B.2 species, is an annual herb that occurs in chaparral and coastal sage scrub communities in dry, open areas at elevations between 3 and 2,800 ft amsl. The flowering period for this species is between January and July.

Suitable habitat for this species is present within the proposed pipeline, existing reservoir area, and the reservoir enlargement site. While this plant was not observed during the focused surveys, the survey took place immediately after the flowering period of this species; therefore, the potential for occurrence of this species within three of the proposed project areas is moderate, and low within the borrow/staging areas due to the disturbed nature of the site.

Lemon Lily

Lemon lily (*Lilium parryi*), a CNPS list 1B.2 species, is an annual herb that occurs in lower montane coniferous forests, meadows and seeps, riparian forests, and upper montane coniferous forests in mesic soils at elevations between 4,265 and 8,530 ft amsl. The flowering period for this species is between July and August.

All three project areas are below the elevation range for this species and suitable habitat within the project areas is lacking. In addition, this species was not observed during the focused plant surveys; therefore, this species is confirmed absent from all four proposed project areas.

Parish's Bush Mallow

Parish's bush mallow (*Malacothamnus parishii*), a CNPS list 1A species, is a deciduous shrub that occurs in chaparral and sage scrub communities at elevations between 1,000 and 1,500 ft amsl. The flowering period for this species is between June and July.

Suitable habitat for this species is present within the proposed pipeline, existing reservoir area, and the reservoir enlargement site. However, the elevations at the project sites are above the range for this species. In addition, this plant was not observed during the focused surveys; therefore, the species is confirmed absent from all four proposed project areas.

Hall's Monardella

Hall's monardella (*Monardella macrantha* ssp. *hallii*), a CNPS list 1B.3 species, is a perennial rhizomatous herb that occurs in broadleafed upland forests, chaparral, cismontane woodlands, lower montane coniferous forests, and valley and foothill grasslands at elevations between 2,395 and 7,200 ft amsl. The flowering period for this species is between June and August.

Suitable habitat for this species is present within the proposed pipeline, existing reservoir area, and the reservoir enlargement sites. However, the proposed pipeline site is below the elevation range for this species. This species was not observed during the focused surveys, and therefore, is considered absent from all four proposed project areas.

Parish's Yampah

Parish's yampah (*Perideridia parishii* ssp. *parishii*), a CNPS list 2.2 species, is a perennial herb that occurs in lower montane coniferous forests, meadows and seeps, and upper montane coniferous forests in mesic soils at elevations between 4,806 and 9,842 ft amsl. The flowering period for this species is between June and August.

All three project areas are below the elevation range for this species, and suitable habitat within the project areas is lacking. In addition, this species was not observed during focused plant surveys; therefore, this species is confirmed absent from all four proposed project areas.

Parish's Gooseberry

Parish's gooseberry (*Ribes divaricatum* var. *parishii*), a CNPS list 1A species, is a deciduous shrub that occurs in riparian woodlands at elevations between 213 and 984 ft amsl. The flowering period for this species is between February and April, and it is identifiable year-round.

Suitable habitat for this species is present within the proposed pipeline, existing reservoir area, and the reservoir enlargement site. However, the elevations of the project areas are above the range for this species. Although the focused plant survey was conducted after the flowering period, this species is identifiable when not in bloom and was not observed in these areas; therefore, it is considered absent from all four proposed project areas.

Southern Jewel-Flower

Southern jewel-flower (*Streptanthus campestris*), a CNPS list 1B.3 species, is a perennial herb that occurs in chaparral, lower montane coniferous forests, and pinyon and juniper woodland on rocky soils at elevations between 2,952 and 7,550 ft amsl. The flowering period for this species is between May and July.

While marginally suitable habitat for this species is present within the proposed pipeline, existing reservoir area, and the reservoir enlargement site, the proposed pipeline site is slightly below the elevation range for this species, and is therefore considered absent from the proposed pipeline. This plant was not observed during the focused surveys of the existing reservoir and enlargement site, the survey took place late in the flowering period of this species; therefore, the potential for occurrence of this species within the two reservoir project areas is moderate, and low within the borrow/staging areas due to the disturbed nature of the site.

Sonoran Maiden Fern

Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*), a CNPS list 2.2 species, is a perennial herb that occurs in meadows and seeps in mesic soils at elevations between 164 and 2,000 ft amsl. The flowering period for this species is between January and September.

All three project areas are above the elevation range for this species, and this species was not observed during the focused plant surveys. Therefore, this species is confirmed absent from all four proposed project areas.

Special-Status Wildlife

A total of 46 wildlife species were evaluated for occurrence along the propose pipeline, existing reservoir, reservoir enlargement sites, and the supplemental borrow and staging areas (**Table 3.3-3**). Ten of the 46 special-status species are federal or state-listed species. Five special-status species were detected at the existing reservoir, including the double-crested cormorant, osprey, Cooper's hawk, southern California rufous-crowned sparrow, and Lawrence's goldfinch. One special-status wildlife species, the southern California rufous-crowned sparrow, was detected at the reservoir enlargement site. No special-status wildlife species were detected along the proposed pipeline site or on the supplemental borrow and staging areas.

TABLE 3.3-3
SPECIAL-STATUS WILDLIFE OBSERVED OR POTENTIALLY OCCURRING IN THE PROJECT AREA

Scientific Name **Common Name**	**Status**	**Proposed Pipeline**	**Existing Reservoir**	**Proposed Reservoir Expansion**	**Borrow/Staging Area**
Federal and State-Listed Species					
Fish					
Catostomus santaanae Santa Ana sucker	USFWS: **FT** CDFG: CSC	A	A	A	A
Amphibians					
Rana aurora daytonii California red-legged frog	USFWS: **FT** CDFG: CSC	A	A	A	A
Rana muscosa Mountain yellow-legged frog	USFWS: **FE** CDFG: CSC	A	A	A	A
Reptiles					
Charina bottae Southern rubber boa	USFWS: **FE** CDFG: CSC	A	A	A	A
Birds					
Coccyzus americanus occidentalis Western yellow-billed cuckoo (nesting)	USFWS: **FC** CDFG: **SE**	A	A	A	A
Empidonax traillii extimus Southwestern willow flycatcher (nesting)	USFWS: **FE** CDFG: **SE**	L-G A-N	L-G A-N	L-G A-N	L-G A-N
Polioptila californica californica coastal California gnatcatcher	USFWS: **FT** CDFG: CSC	L	AA	AA	AA
Vireo bellii pusillus Least Bell's vireo (nesting)	USFWS: **FE** CDFG: **SE**	A-N	A-N	A-N	A-N
Mammals					
Dipodomys merriami parvus San Bernardino kangaroo rat	USFWS: **FE** CDFG: CSC	A	A	A	A
Dipodomys stephensi Stephens' kangaroo rat	USFWS: **FE** CDFG: **ST**	A	A	A	A

TABLE 3.3-3 (continued)
SPECIAL-STATUS WILDLIFE OBSERVED OR POTENTIALLY OCCURRING IN THE PROJECT AREA

Scientific Name **Common Name**	**Status**	**Proposed Pipeline**	**Existing Reservoir**	**Proposed Reservoir Expansion**	**Borrow/Staging Area**
Other Special-Status Species					
Fish					
Rhinichthys osculus* ssp. *3 Santa Ana speckled dace	USFWS: None CDFG: CSC	A	A	A	A
Reptiles					
Anniella pulchra pulchra silvery legless lizard	USFWS: None CDFG: CSC	L	L	L	L
Aspidoscelis hyperythra orange-throated whiptail	USFWS: None CDFG: CSC	M	M	M	M
Lampropeltis zonata parvirubra California mountain kingsnake (San Bernardino population)	USFWS: None CDFG: CSC	L	L	L	L
Phrynosoma coronatum blainvillii coast (San Diego) horned lizard	USFWS: None CDFG: CSC	M	M	M	M
Thamnophis hammondii two-striped garter snake	USFWS: None CDFG: CSC	A	AA	A	A
Birds					
Accipiter cooperii Cooper's hawk	USFWS: None CDFG: CSC	H-F AA- N	P-F AA-N	H-F AA-N	H-F AA-N
Aimophila ruficeps canescens southern California rufous-crowned sparrow	USFWS: None CDFG: CSC	H	H	P	H
Athene cunicularia burrowing owl	USFWS: None CDFG: CSC	L	L	L	L
Carduelis lawrencei Lawrence's goldfinch	USFWS: None CDFG: None	M-F/G AA-N	P-F/G L-N	M-F/G AA-N	M-F/G AA-N
Dendroica petechia brewsteri yellow warbler (nesting)	USFWS: None CDFG: CSC	L-G A-N	L-G A-N	L-G A-N	L-G A-N
Eremophila alpestris actia California horned lark	USFWS: None CDFG: CSC	L	L	L	L
Icteria virens yellow-breasted chat (nesting)	USFWS: None CDFG: CSC	L-G A-N	L-G A-N	L-G A-N	L-G A-N
Lanius ludovicianus loggerhead shrike (nesting)	USFWS: None CDFG: CSC	L	L	L	L
Pandion haliaetus Osprey	USFWS: None CDFG: CSC	AA-F A-N	P-F A-N	AA-F A-N	AA-F A-N
Phalacrocorax auritus double-crested cormorant (rookery site)	USFWS: None CDFG: CSC	A-RS M-FO	A-RS P-R	A-RS M-FO	A-RS M-FO

TABLE 3.3-3 (continued)
SPECIAL-STATUS WILDLIFE OBSERVED OR POTENTIALLY OCCURRING IN THE PROJECT AREA

Scientific Name **Common Name**	**Status**	**Proposed Pipeline**	**Existing Reservoir**	**Proposed Reservoir Expansion**	**Borrow/Staging Area**
Mammals					
Antrozous pallidus pallid bat	USFWS: None CDFG: CSC	L-F AA-R	M-F AA-R	L-F AA-R	L-F AA-R
Chaetodipus (Perognathus) fallax fallax northwestern San Diego pocket mouse	USFWS: None CDFG: CSC	P	L	L	L
Eumops perotis californicus California western mastiff bat	USFWS: None CDFG: CSC	L-F AA-R	M-F AA-R	L-F AA-R	L-F AA-R
Glaucomys sabrinus californicus San Bernardino flying squirrel	USFWS: None CDFG: CSC	A	A	A	A
Nyctinomops ferorosaccus pocketed free-tailed bat	USFWS: None CDFG: CSC	L-F AA-R	L-F AA-R	L-F AA-R	L-F AA-R
Perognathus alticolus alticolus white-eared pocket mouse	USFWS: None CDFG: CSC	A	A	A	A
Perognathus longimembris brevinasus Los Angeles pocket mouse	USFWS: None CDFG: CSC	A	A	A	A
Taxidea taxus American badger	USFWS: None CDFG: CSC	M	M	M	M

NOTES:
Potential for Occurrence Designations:
AA Assumed absent
A Absent
L Low potential
M Moderate potential
H High potential
P Present
G Migrating
N Nesting
F Foraging
R Roosting
RS Rookery Site
FO Flying Over

Federal Designations (Federal Endangered Species Act, USFWS)
FE Federal listed, endangered
FT Federal listed, threatened
FC Federal candidate for listing

State Designations (California Endangered Species Act, CDFG)
SE State listed, endangered
ST State listed, threatened
CSC California Special Concern Species

SOURCE: CNDDB for Redlands, Yucaipa, Harrison Mountain, and Keller Peak 7.5 minute USGS quadrangles, 2007.

Santa Ana Sucker

The Santa Ana sucker (*Castostomus santaanae*) is a federally threatened species and a California species of concern. Although water is present in the Crafton Hills Reservoir, it is geographically

isolated and there are no creeks or river areas suitable for the presence of Santa Ana sucker. Therefore, this species is absent from all four proposed project areas.

California Red-legged Frog

The California red-legged frog (*Rana aurora draytonii*) is a federally threatened species and a California species of concern. It may occur in a variety of habitats from near sea level to 8,000 feet in elevation and is strongly associated with permanent sources of water, including cattail and tule marshes, reservoirs, ponds, and streamsides. Permanent surface water is present at the existing Crafton Hills Reservoir and the nearest known occurrences are greater than five miles from the project sites; however, suitable habitat is not present at the reservoir site. Due to a lack of permanent suitable habitat, it is considered absent from all four proposed project areas.

Mountain Yellow-legged Frog

The mountain yellow-legged frog (*Rana muscosa*) is a federally endangered species in the southern part of its range, a federal candidate to the north, and a California Species of Concern throughout the State. It seems to prefer gently sloping banks with rocks and/or vegetation up to the edge of the water (Stebbins, 2003) and is most always found within several meters of water, including streams, ponds, lakes, reservoirs, and riparian woodlands at moderate to high elevations. Although permanent surface water is present at the existing Crafton Hills Reservoir, the nearest known occurrences are greater than five miles from the project sites; therefore this species is assumed absent from all four proposed project areas

Southern Rubber Boa

The southern rubber boa (*Charina bottae umbratica*) is a state-listed threatened species. This species is found in the vicinity of streams or wet meadows and requires loose, moist soil for burrowing and seeks cover in rotting logs. Suitable habitat to support this species was not present on the project sites, and the elevation range is below that which the species requires; therefore, it is considered to be absent from all four proposed project areas.

Western Yellow-billed Cuckoo

The western yellow-billed cuckoo (nesting) (*Coccyzus americanus occidentalis*) is a federal candidate for listing and a state-listed endangered species. This species typically nests in willows and forages more so among the cottonwoods and other trees. Suitable habitat to support this species was not present on the project sites; therefore, it is considered to be absent from all four proposed project areas.

Southwestern Willow Flycatcher

The southwestern willow flycatcher (nesting) is a federally and state endangered subspecies of willow flycatcher. Riparian habitats suitable for the nesting of this species was not present at the project sites during the reconnaissance and focused plant surveys; therefore, this species is considered absent from all four proposed project areas for nesting purposes. This species has a low potential to occur as a migrant at all four proposed project areas.

Coastal California Gnatcatcher

The coastal California gnatcatcher is a federally threatened species and a California Species of Concern. It is a permanent resident of Diegan, Riversidean, and Venturan sage scrub subassociations found from sea level to 2,500 feet in elevation. Within its range, it associates strongly with California sagebrush dominant habitats and also occurs in mixed scrub habitats with lesser percentages of this favored shrub. Other plant species important for the nesting and foraging of this species include California buckwheat, white sage, black sage, and chaparral broom (Baccharis sarothroides). Since this species is known to occur within five miles of the project vicinity and a small area of suitable habitat exists on the south side of Mill Creek Road, this species has a low potential to occur at the proposed pipeline site. It is assumed absent from the rest of the proposed project areas due to a lack of suitable habitat.

Least Bell's Vireo

The least Bell's vireo (nesting) (*Vireo bellii pusillus*) is a federally and state-listed endangered subspecies of the Bell's vireo. This species prefers to nest in low, dense, scrubby vegetation in early successional areas and is particularly dependent on corridors of habitat along rivers and streams. Due to a lack of suitable breeding habitat, this species is considered absent from all four proposed project areas.

San Bernardino Kangaroo Rat

The San Bernardino kangaroo rat (*Dipodomys merriami parvus*) is a federally endangered species and a California Species of Concern. This species prefers gravelly and sandy soils in alluvial habitats where it constructs underground burrows and rarely occurs in dense vegetation. This species is known to occur within five miles of the project area. Due to lack of suitable habitat, the San Bernardino kangaroo rat was considered absent from the proposed reservoir sites. Marginally suitable habitat was present at the proposed pipeline site for this species and protocol trapping surveys were conducted from May 16 to May 21, 2007 by USFWS-permitted kangaroo rat specialist Steve Montgomery. Trapping results at the proposed pipeline site were negative for the San Bernardino kangaroo rat (Montgomery, 2007); therefore, this species is considered absent from all four proposed project areas.

Stephens' Kangaroo Rat

The Stephens' kangaroo rat (*Dipodomys stephensi*) is a federally endangered and state-listed threatened species. This species generally occurs in both non-native and perennial grasslands with sparse perennial vegetation, as well as in sparse coastal sage scrub and sagebrush communities with sparse canopy coverage. Due to lack of suitable habitat, the Stephens' kangaroo rat was considered absent from the proposed reservoir sites. Marginally suitable habitat was present at the proposed pipeline site for this species and protocol trapping surveys were conducted from May 16 to May 21, 2007 by USFWS-permitted kangaroo rat specialist Steve Montgomery. Trapping results at the proposed pipeline site were negative for the Stephens' kangaroo rat (Montgomery, 2007); therefore, this species is considered absent from all four proposed project areas.

Santa Ana Speckled Dace

The Santa Ana speckled dace (*Rhinichthys osculus* spp. *3*) is a California Species of Concern. Although water is present in the Crafton Hills Reservoir, it is geographically isolated and there are no creeks or river areas suitable for the presence or movement of the Santa Ana speckled dace into the reservoir. Therefore, this species is considered absent from all four proposed project areas.

Silvery Legless Lizard

The silvery legless lizard is a California Species of Concern. This species is found in chaparral, pine-oak woodlands, riparian woodlands, and also on beaches from sea level to around 5,100 feet. Within these habitats, it prefers loose soils or sand for burrowing, moisture, warmth, and plant cover (Stebbins, 2003). Marginally suitable habitat is present only within small areas of the project site, and the nearest known occurrence is over five miles from the project site. Therefore, this species has a low potential to occur within all four proposed project areas.

Orange-throated Whiptail

The orange-throated whiptail is a California Species of Concern. It frequents sandy washes, alluvial floodplains, rocky hillsides, and vegetation communities that provide both open territory and adequate shading. This species is often associated with California buckwheat, California sagebrush, black sage, white sage, chamise, and redshank (*Adenostema sparsifolium*) sage scrub and chaparral habitats. Since suitable habitat is present in many areas of the project sites and known occurrences are within five miles, this species has a moderate potential to occur within all four proposed project areas.

San Bernardino Mountain Kingsnake

The San Bernardino Mountain kingsnake is a California Species of Concern. This California endemic is restricted to the San Gabriel, San Bernardino, and San Jacinto mountains of southern California. It occurs in well-illuminated canyons with rocky outcrops or rocky talus in association with bigcone spruce (*Pseudotsuga macrocarpa*) and various canyon chaparral species at lower elevations, and with black oak (*Quercus kelloggii*), incense cedar (*Calocedrus decurrens*), Jeffrey pine (*Pinus jeffreyi*), and ponderosa pine (*Pinus ponderosa*) at higher elevations. Marginally suitable habitat is present in some of the project area, but the nearest known occurrences are in the higher elevations removed from the project sites. Therefore this species has a low potential to occur within all four proposed project areas.

Coast (San Diego) Horned Lizard

The coast (San Diego) horned lizard is a California Species of Concern. It is found in a wide variety of habitats including coastal sage scrub, annual grasslands, chaparral, oak woodlands, riparian woodlands, and coniferous forests. It is perhaps most abundant in riparian and coastal sage scrub habitats on old alluvial fans of the southern California coastal plain. In foothill and mountain habitats that are covered with dense brush or other vegetation, the species is largely restricted to areas with pockets of open microhabitat.. Suitable habitat is present throughout the proposed project sites and known occurrences exist within the vicinity (within five miles) of the

project site; therefore, this species has a moderate potential to occur for all four proposed project areas.

Two-striped Garter Snake

The two-striped garter snake is a California Species of Concern. It is found in or near permanent and intermittent freshwater, habitats include streams, rivers, ponds, and small lakes from sea level to around 8,000 feet. This habitat may be surrounded by oak woodlands, brushlands, sparse coniferous forests, and riparian forests. This species is known to occur within five miles of the project sites. Although water is present in Crafton Hills Reservoir, this water body is not connected to any creek or stream, and therefore this species is assumed absent from the existing reservoir area. Due to a lack of suitable habitat, this species is considered absent from the other three proposed project areas.

Cooper's Hawk

The Cooper's hawk (nesting) is a California Species of Concern. This species occurs as a migrant and/or resident over most of the U.S. from southern Canada to northern Mexico. Favored habitats include open woodlands, mature forests, woodland edges, and river groves. More recently, the Cooper's hawk has been known to breed in suburban and urban areas with similar tree structure to native habitats.

The Cooper's hawk was found present at Crafton Hills Reservoir on July 16, 2007 (Figure 4). One individual was observed flying low over the surrounding hills and foraging for prey. Although the nearest known nesting occurrence is almost ten miles from the project sites, this species could include a portion of the project sites as breeding territory. However, due to a lack of suitable nesting trees, this species is assumed absent for nesting onsite, and since it was found present foraging at the existing reservoir, it has a high potential to occur as a foraging species within all four proposed project areas.

Southern California Rufous-crowned Sparrow

The southern California rufous-crowned sparrow is a California Species of Concern. Habitats include broken sage scrub and chaparral, native grasslands with sparse shrubs, and rocky, brushy hillsides and canyons with open patches. The southern California rufous-crowned sparrow was present at the reservoir enlargement site during the reconnaissance-level survey. Since suitable habitat exists throughout the area, there is a high potential for this species to occur at the other three proposed project areas.

Burrowing Owl

The burrowing owl is a California Species of Concern. It breeds in open plains from southern Canada and the western United States to Baja and central Mexico (Johnsgard, 1988); another population occurs in southern Florida. It is found year-round in the southwestern states south of San Francisco through Baja California and central Mexico. This species inhabits dry, open, annual or perennial short grasslands, deserts, treeless plains, coastal dunes, rangelands, scrublands and occasionally, urban areas characterized by low-growing vegetation (Haug et al. 1993). It primarily occupies small mammal burrows, particularly ground squirrel, for subterranean shelter

and nesting. Breeding typically occurs from March through August, with peak periods in May and July. Marginally suitable habitat is present at all three project sites and known occurrences exist within ten miles of the site. Therefore, this species has a low potential of occurrence at all four proposed project sites.

Lawrence's Goldfinch

The Lawrence's goldfinch (nesting) is not a listed species, but it is considered rare in California. In southern California, it is rarely found at higher elevations in the Colorado Desert and was also found historically in the lower Colorado River Valley. It inhabits arid and open woodlands near chaparral or other bushy areas and tall annual grasslands, and tends to associate with sources of water. Its nesting grounds are frequently dominated by live oaks (*Quercus* spp.) and blue oaks (*Quercus douglasii*) and may also use riparian woodlands, coastal scrub, or broadleaf evergreen forests (Davis, 1999). Lawrence's goldfinch was present (foraging) at the proposed reservoir enlargement site during the focused plant survey, and it has a low potential to nest in this area. Due to the lack of water sources at the other three proposed project areas, this species has a moderate potential to forage there, but is assumed absent for nesting in these areas.

Yellow Warbler

The yellow warbler (nesting) (*Dendroica petechia brewsteri*) is a California Species of Concern. Its breeding range includes most of North America from northern Alaska and northern Canada to the southern U.S. and Mexico. Breeding habitats include wet areas such as riparian woodlands, orchards, gardens, swamp edges, and willow thickets. Most breeding habitats generally contain medium to high-density tree and shrub species with ample early successional understories. In migration, it may occur in other habitats, including early seral riparian habitats. Since suitable nesting habitat does not exist within the four proposed project areas, this species is considered absent, though there is a low potential for occurrence as a migrant.

California Horned Lark

The California horned lark is a California Species of Concern. It is a sub-species of the horned lark, a widespread species of the northern hemisphere that breeds in California generally from Sonoma County southward. It occurs in a variety of open habitats, including bare ground, sparse short grasslands, dry prairies, open fields, deserts, brushy flats, tundra, and developed habitats, such as fallow agricultural fields, airports, golf courses, parks, and open residential areas. Breeding territories are more widespread, and flocks do not typically occur during the breeding season. In southern California and particularly in the desert region, winter populations are greatly augmented by other subspecies. Open habitats favored by this species are found only in small portions of the overall project area; this species has a low potential of occurrence throughout all four proposed project areas.

Yellow-breasted Chat

The yellow-breasted chat (nesting) (*Icteira virens*) is a California Species of Concern. This species is a summer resident along coastal and cismontane California and in the foothills of the Sierra Nevada Range. Migrants and breeders arrive in California in April and return to their wintering grounds in September. Habitats include swamplands, riparian willow thickets and other

dense brush, often near watercourses. Riparian scrub occurs in the project sites only in small areas bordering the Crafton Hills Reservoir. The amount of riparian habitat present is not sufficient to support this species; therefore, this species is considered absent from all four proposed project areas as a breeding species, but has a low potential to occurrence as a migratory species.

Loggerhead Shrike

The loggerhead shrike (nesting) is a California Species of Concern. The U.S. population is largely resident to the south and migratory to the north, but migrants and residents frequently overlap throughout its range. Habitats may include oak savannas, open chaparral, desert washes, juniper woodlands, Joshua tree woodlands, and other semi-open areas. It can occupy a variety of semi-open habitats with scattered trees, large shrubs, utility poles, and other structures that serve as lookout posts for potential prey. Marginally suitable habitat is found in some areas of the project sites, and known occurrences exist within five miles of the sites. Therefore, this species has a low potential for occurrence at all four proposed project areas.

Osprey

The osprey (nesting) is a California Species of Concern and is considered a special-status species by the California Department of Forestry (CDF). The osprey breeds from the northern United States up through Canada and into Alaska. Most of the North American population winters south of the U.S. in Central and South America, as well as along the Pacific and Caribbean coasts of Mexico. Wintering grounds also include coastal California and southeastern California. This raptor species forages primarily on fish and is strongly associated with open water throughout its range. It builds a large nest of twigs, sticks, moss, and other materials high on a tree or artificial structure, and will use it for several seasons. The osprey was present at the Crafton Hills Reservoir foraging, however, due to the lack of water at the other three proposed project locations it is assumed absent from foraging there. Due to the lack of suitable habitat, this species is considered absent from nesting anywhere within the four proposed project areas.

Double-crested Cormorant

The double-crested cormorant (rookery sites) is a California Species of Concern. It is the most numerous and widely distributed of the North American cormorants, occurring in large numbers in the interior of the North American continent, as well as on the coast. Breeding colonies in California are generally found on the northeastern coast of the state, in small numbers in San Francisco Bay and the Central Valley, and in declining numbers on the Salton Sea. The species is associated with aquatic habitats, such as lakes, artificial impoundments, slow-moving rivers, lagoons, estuaries, swamps, seacoasts, and coastal cliffs. It is a colonial nester and typically nests on the sloped grounds of coastal cliffs and offshore islands, or in the tall trees at the margins of lakes when inland. Communal roosts may be found on dead trees, islands, and rocky shorelines.

One double-crested cormorant was observed resting on a dam structure at the Crafton Hills Reservoir during the focused plant survey on July 16, 2007. No rookeries were observed onsite, and this species is not known to breed within ten miles of the project sites. Therefore, this species is considered absent for breeding on all proposed project areas. However, since one individual

was seen at the reservoir and many cormorants are known to occur just south of the reservoir in the lakes of Yucaipa Regional Park, this species likely occurs on a regular or semi-regular basis at the existing reservoir area as a foraging/resting species. It has a moderate potential to occur at the other three proposed project areas as a flyover species.

Pallid Bat

The pallid bat is listed as a California Species of Concern. It occurs in a variety of habitats, including arid desert scrub, oak woodlands, juniper woodlands, grasslands, coniferous forests, and water-associated habitats. It may be more common throughout its range where rocky outcrops provide roost sites.

Since surface water is present at Crafton Hills Reservoir and this species is known to occur within five miles of the project site, this species has a moderate potential to be found foraging at the existing reservoir. It has a low potential to forage within the other three proposed project areas. The roosting potential for this species is assumed absent within all four proposed project areas due to a lack of suitable sites.

Northwestern San Diego Pocket Mouse

The northwestern San Diego pocket mouse is a California Species of Concern. It occurs in sage scrub, sparse grasslands, and chaparral communities from sea level to about 6,000 feet in elevation. This nocturnal mouse species forages for seeds below shrub and canopies and spends the day in relatively elaborate burrow systems.

The northwestern San Diego pocket mouse is common in many areas of the Mill Creek and Santa Ana River alluvial plains in the vicinity of the project sites. This species was found present along the proposed pipeline site during the focused kangaroo rat trapping survey. During this trapping survey, a habitat assessment was conducted for the potential of this species at the other proposed project areas. Most of the small mammal burrows observed onsite were of pocket gophers. The overall site conditions are not favorable for this species; the topography is steep, the soil is granitic, and the vegetation is generally too dense, therefore, this species has a low potential to occur at the other three proposed project areas.

California Western Mastiff Bat

The California western mastiff bat is listed as a California Species of Concern. It roosts in small colonies or singly in primarily natural substrates, such as cliff faces, large boulders, and exfoliating rock surfaces. It is found in a wide variety of habitats, including desert scrub, chaparral, woodlands, floodplains, and grasslands

Since surface water is present at Crafton Hills Reservoir and this species is known to occur within five miles of the project site, this species has a moderate potential to occur at the existing reservoir. It has a low potential to occur within the other three proposed project areas. Roosting potential for this species is assumed absent from all four proposed project areas due to a lack of roosting sites.

San Bernardino Flying Squirrel

The San Bernardino flying squirrel (*Glaucomys sabrinus californicus*) is a California Species of Concern. Although little is known about its distribution, populations are known to occur in the San Jacinto and San Bernardino Mountains. This species inhabits various woodlands, including coniferous, mixed coniferous-deciduous, and broad-leaf-deciduous forests. It prefers old growth forests, but will also occur in second growth forests. Populations of flying squirrels tend to fare better in riparian areas than upland areas. Since mature woodland habitats are not present on any of the project sites and elevations are lower than that which the species prefers, this species is considered absent from all four proposed project areas.

Pocketed Free-tailed Bat

The pocketed free-tailed bat is a California Species of Concern. This species is common in Mexico, but rare in California. While its movements are not well-known in California, it is most likely a year-long resident. It inhabits pinyon-juniper woodlands, desert scrub, desert succulent shrub, desert riparian, desert washes, alkali desert scrub, Joshua tree, and palm oasis habitats. It roosts in small groups in rock crevices, caverns, and buildings. The pocketed free-tailed bat emerges from its roost after sunset and feeds on insects flying over desert habitat, streams, or ponds.

Since the pocketed free-tailed bat is historically uncommon in the project area and most records exist south of the project sites, this species has a low potential to be found foraging within the four proposed project areas. Due to a lack of suitable roosting sites, the roosting potential for this species is assumed absent for all four proposed project areas.

White-eared Pocket Mouse

The white-eared pocket mouse (*Perognathus alticolus alticolus*) is a California Species of Concern. It occurs in elevations between 3,500 and 5,900 feet. It inhabits ponderosa and Jeffrey pine forests with grass and bracken fern undergrowth. It burrows in loose soils and builds nests of grass inside the burrows. Elevations within the project areas are below the requirements of this species; the white-eared pocket mouse is considered absent from all four proposed project areas.

Los Angeles Pocket Mouse

The Los Angeles pocket mouse is a California Species of Concern. This pocket mouse occurs in lower elevation grasslands and sage scrub communities in the Los Angeles Basin of California, including Burbank and San Fernando on the northwest to San Bernardino on the northeast, and Cabazon, Hemet, and Aguanga on the east and southeast. Habitats include non-native grasslands, sparse Riversidean sage scrub, Riversidean alluvial fan sage scrub, and redshank chaparral. Within its habitats, it occurs in open patches with fine sandy soils potentially suitable for burrowing (CDFG, 1986).

Marginally suitable habitat for this species is only present at the proposed pipeline site, but was not found to be present during the focused kangaroo rat trapping surveys. In addition, the nearest known occurrence is ten miles east and the site location is most likely outside of the known range

of this species. The other three proposed project areas do not contain any suitable habitat, therefore this species is considered absent from all four proposed project areas.

American Badger

The American badger is a California Species of Concern. In California, the badger may occupy a variety of habitats, especially grasslands, savannas, montane meadows, sparse scrublands, and deserts. It prefers friable soils for burrowing, and relatively open, uncultivated ground. This species is known to occur within five miles of the site, and marginally suitable habitat exists within all four proposed project areas; this species has a moderate potential for occurrence.

3.3.3 Impact Assessment

To determine the level of significance of an identified impact, the criteria outlined in the *CEQA Guidelines* were used. The following is a discussion of the approaches to, and definitions of, significance of impacts to biological resources drawn from several distinct guidelines sections.

CEQA Guidelines Section 15065 directs lead agencies to find that a project may have a significant effect on the environment if it has the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory. *CEQA Guidelines* Section 15206 further specify that a project shall be deemed to be of statewide, regional, or area-wide significance if it would substantially affect special-status wildlife habitats including, but not limited to, riparian lands, wetlands, bays, estuaries, marshes, and habitats for rare and endangered species as defined by the Fish and Game Code Section 903. *CEQA Guidelines* (Section 15380) provide that a plant or animal species, even if not on one of the official lists, may be treated as "rare or endangered" if, for example, it is likely to become endangered in the foreseeable future. Additional criteria to assess significant impacts to biological resources due to the proposed project are specified in *CEQA Guidelines* Section 15382 (Significant Effect on the Environment) "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance."

The proposed project's potential impacts were assessed using the *CEQA Guidelines* Appendix G Checklist. The following sections discuss the key issue areas identified in the *CEQA Guidelines* with respect to the project's potential effect on biological resources. Significance thresholds are identified and a significance conclusion is made following the discussion.

Special-Status Species and Habitat

This section discusses the following CEQA Checklist questions:

> *Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFG or USFWS?*

Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS?

Significance Threshold

The proposed project would have a significant impact if construction or operation of the project would have a substantial adverse effect, either directly or through habitat modifications on candidate, sensitive, or special-status species. For the purpose of this EIR analysis, a substantial adverse impact would result if the project would result in the take of a formally listed or special-status species. Additionally, significant impacts would result if there was an adverse effect on riparian habitat or other natural community of special concern by means of habitat removal or habitat disturbance.

Impact Analysis

Plummer's mariposa lily

The proposed project would result in permanent impacts to Plummer's mariposa lily, a CNPS 1B.2 special-status plant species, which is considered rare and fairly endangered in California and throughout its range. The plant was observed at several locations along the proposed reservoir enlargement site during the reconnaissance survey conducted by Chambers in 2007, and has been determined to have a moderate potential to occur in the connector pipeline area.

A total of 19 acres of Plummer's mariposa lily habitat would be permanently impacted during the construction of the proposed reservoir enlargement. An additional 28.5 acres of Plummer's mariposa lily habitat would be temporarily impacted in areas that could be restored with native habitat following construction. In order to reduce potentially significant impacts on special-status plant species, and to ensure that minimum standards of mitigation are set forth for the special-status plant species, the following mitigation measures shall be implemented.

Mitigation Measures

BIO-1: DWR shall have a qualified biologist conduct a pre-construction spring/summer floristic inventory and rare plant survey at the proposed project areas to determine and map the location and extent of Plummer's mariposa lily and other special-status plant species populations, including the construction easement and right-of-way. The locations of Plummer's mariposa lily and other special-status plant species affected by project construction and operation shall be identified.

BIO-2: DWR shall avoid and minimize impacts on special-status plant species by reducing the construction right-of-way through occurrences of special-status plant species to either avoid the occurrence or reduce impacts to the minimum necessary to complete the project.

BIO-3: DWR shall stake, flag, fence, or otherwise clearly delineate the construction right-of-way that restricts the limits of construction to the minimum necessary to implement the project that also would avoid and minimize impacts on special-status plants where feasible.

BIO-4: Where avoidance of special-status plant species is not feasible, DWR shall prepare and implement a special-status species habitat restoration plan for unavoidable temporary

impacts to special-status plants due to project construction. The restoration plan shall include at a minimum the following measures:

- Documentation of the location and extent of special-status plant species affected by construction in areas that would not be permanently cleared or filled and quantification of the temporary impacts based on acres of habitat, individual plants, and/or other means to clearly articulate the unavoidable impacts.
- Goals and objectives for special-status plant species that establish the quantifiable criteria for successful implementation and completion of the restoration plan.
- A salvage and replacement program for the top 6 to 12 inches of surface material and topsoil including plant material and duff.
- A salvage and replanting program for perennial special-status species.
- An invasive plant species maintenance, monitoring, and removal program.
- Success criteria that establishes yearly thresholds for growth and establishment of special-status plant species on an acreage extent of occurrence or per plant basis.

BIO-5: Where permanent loss of special-status plant habitat occurs, DWR shall prepare and implement a special-status species compensation plan for unavoidable permanent impacts to special-status plants due to project operation. The compensation plan shall include at a minimum the following measure:

- Purchase of compensatory mitigation lands or credits at an approved conservation bank at a minimum 1:1 ratio for the preservation in perpetuity and dedication in deed restriction, conservation easement, or some other suitable land conservation instrument with known occurrences of Plummer's mariposa lily.

Significance Conclusion

Less than significant with mitigation. Implementation of the above listed mitigation measures would reduce impacts to special-status species and habitats to a less-than-significant level.

Special-Status Wildlife Species

Field surveys of the existing reservoir, proposed reservoir enlargement area, proposed pipeline area, and borrow/staging areas have identified the low to high probability of occurrence for the silvery legless lizard, orange-throated whiptail, California mountain king snake, coast (San Diego) horned lizard, northwestern San Diego pocket mouse, and American badger. These species are localized ground dwelling residents of the RAFSS and other habitat within the project area. None of these species are listed as threatened or endangered on the state or federal Endangered Species Act (see Table 3.3-3). Both temporary and permanent impacts on the RAFSS and other habitat would result in the loss of habitat for these California Special Concern species to the extent they occur within the project area.

In order to reduce potentially significant impacts to a less-than-significant level, and to ensure that minimum standards of mitigation are set forth for special-status ground dwelling species, the following mitigation measures shall be implemented.

Mitigation Measures

BIO-6: DWR shall have a qualified biologist conduct pre-construction spring/summer active season general reconnaissance and trapping surveys for the special-status wildlife species within the proposed project area to determine and map the location and extent of special-status species occurrence(s), including the construction easement and right of way.

BIO-7: DWR shall stake, flag, fence, or otherwise clearly delineate the construction right-of-way that restricts the limits of construction to the minimum necessary to implement the proposed project that also would avoid and minimize impacts on special-status wildlife species and RAFSS habitat.

BIO-8: DWR shall have a qualified biologist conduct a pre-construction capture, salvage, and relocation effort to remove special-status wildlife species from the project area to avoid and minimize impacts to these species.

BIO-9: During construction, DWR shall enlist the services of a biological construction monitor to conduct, as necessary, capture, salvage, and relocation efforts to remove special-status wildlife species from the project area to avoid and minimize impacts to these species.

BIO-10: Where avoidance of special-status wildlife species is not feasible, DWR, in consultation with CDFG and USFWS, shall prepare and implement a special-status wildlife species and RAFSS habitat restoration plan for unavoidable temporary impacts to special-status wildlife and RAFSS habitat due to project construction. The restoration plan shall be part of that specified for special-status plants in Mitigation Measure BIO-4 and shall include at a minimum the following measures:

- Documentation of the location and extent of special-status wildlife species and occupied habitat affected by construction and quantification of impacts based on acres of occupied habitat, and/or other means to clearly articulate the unavoidable impacts.
- Goals and objectives for the RAFSS and special-status wildlife species that establishes the quantifiable criteria for successful implementation and completion of the restoration plan.
- An invasive plant species maintenance, monitoring, and removal program.

BIO-11: Where avoidance of special-status species is not feasible, DWR, in consultation with CDFG and USFWS, shall prepare and implement a special-status species and habitat compensation plan for unavoidable permanent impacts to special-status wildlife species, and conversion of RAFSS and upland habitat. The compensation plan shall include at a minimum the following measure:

- Purchase of compensatory mitigation lands or credits at a conservation bank at a minimum 1:1 ratio for the preservation in perpetuity and dedication in deed restriction, conservation easement, or some other suitable land conservation instrument over RAFSS and/or chaparral upland habitat. This compensatory mitigation can be satisfied under the same habitat acquisition/conservation credit program under Mitigation Measure BIO-5 that is compatible for both the impacted plant and wildlife species and RAFSS/upland habitat.

Significance Conclusion

Less than significant with mitigation. Implementation of the above listed mitigation measures would reduce impacts to special-status species and habitats to a less-than-significant level.

California Gnatcatcher, Other Nesting Birds, and Special-Status Bats

The setting section documents the possible presence of the federally listed threatened coastal California gnatcatcher within the RAFSS habitat along the proposed pipeline area. In addition, field studies have identified the occurrence or potential for occurrence of California Species of Concern Cooper's hawk, southern California rufous-crowned sparrow, burrowing owl, Lawrence's goldfinch, California horned lark, loggerhead shrike, osprey, double-crested cormorant, pallid bat, California western mastiff bat and pocketed free-tailed bat within the proposed project areas. These species are mobile resident and seasonal migrants through the RAFSS and other habitat in the project region.

Temporary and permanent impacts on Riversidean sage scrub and other plant communities present on-site would result in the loss of habitat for these species to the extent they occur within the project site. The CDFG Code Sections 3503 and 3503.5 and the Federal Migratory Bird Treaty Act (MBTA) of 1918 also prohibit the possession and destruction of birds, nests, and/or their eggs.

The existing reservoir is an attractive location for mobile birds to take advantage of due to the abundant water source and it's proximity to the adjacent undisturbed open space. The proposed project would be removing several trees and shrubs within the existing reservoir, the proposed reservoir enlargement site, and the proposed pipeline site. Removal of trees or shrubs that provide nesting habitat could result in the direct mortality of nesting or foraging birds protected by the Fish and Game Code and/or Migratory Bird Treaty Act.

Construction activities would increase the level of commotion and presence of humans and large machines in open space areas for the duration of construction of the reservoir enlargement. This commotion would significantly alter the ambient noise conditions of the Crafton Hills and could disrupt nesting birds and other wildlife. Construction noise in excess of 80 dBA (see Section 3.9, Noise) could startle nesting birds resulting in flight response, causing birds to leave nests and affecting survival of the brood.

In order to reduce potentially significant impacts to a less-than-significant level, and to ensure that minimum standards of mitigation are set forth for the coastal California gnatcatcher, RAFSS habitat, and special-status mobile bird and bat species, the following mitigation measures shall be implemented.

Mitigation Measures

BIO-12: DWR shall have a qualified biologist conduct a pre-construction nesting season protocol survey for the coastal California gnatcatcher within the proposed pipeline project area to determine and map the location and extent of nesting coastal California gnatcatcher occurrence(s) within the construction right-of-way.

BIO-13: DWR shall have a qualified biologist conduct a pre-construction spring/summer active season general reconnaissance for nesting/roosting special-status mobile bird and bat species, and other nesting birds within the proposed project areas to determine and map the location and extent of special-status species occurrence(s).

BIO-14: DWR shall avoid direct impacts on nesting coastal California gnatcatchers and any nesting birds located within the construction right of way. This could be accomplished by establishing the construction right of way and removal of plant material outside of the typical range of the breeding bird season (February 1 through August 31).

BIO-15: If construction and vegetation removal is proposed for the bird nesting period February 1 through August 31, then active nest sites located during the pre-construction surveys shall be avoided and a non-disturbance buffer zone established dependent on the species and as approved by the USFWS and CDFG. Nest sites shall be avoided with approved non-disturbance buffer zones until the adults and young are no longer reliant on the nest site for survival as determined by a qualified biologist.

BIO-16: If a natal bat roost site is located during pre-construction surveys, it shall be avoided with non-disturbance buffer zone established by a qualified biologist until the site is abandoned.

BIO-17: DWR shall minimize impacts on documented locations of nesting coastal California gnatcatchers and any nesting birds by reducing the construction right-of-way through areas of occurrences to either avoid the occurrence or reduce impacts to the minimum necessary to complete the proposed project.

BIO-18: DWR shall stake, flag, fence, or otherwise clearly delineate the construction right-of-way that restricts the limits of construction to the minimum necessary to implement the proposed project that also would avoid and minimize impacts on special-status wildlife species and RAFSS habitat.

Significance Conclusion

Less than significant with mitigation. Implementation of the above listed mitigation measures would reduce impacts to special-status species and habitats to a less-than-significant level.

Natural Habitat and Common Wildlife

The Crafton Hills serve as important high quality habitat for wildlife in the area of the project site and connects to the San Bernardino National Forest. The open space area is managed by the Crafton Hills Open Space Conservancy. An abundant amount of carnivore scat, small mammal burrows and larger burrows were observed throughout the reservoir enlargement site. The proposed project would adversely impact wildlife and high quality habitat within the proposed reservoir enlargement site. Impacts to habitat and wildlife include the proposed reservoir enlargement area, stockpile area, spoil areas and maintenance roads. Roads associated with the proposed project would be considered permanent impacts, even though re-vegetation would be required for erosion control measures. Impact to natural habitats and common wildlife would be considered less than significant with implementation of the following mitigation measure.

Mitigation Measures

BIO-19: DWR shall purchase compensatory mitigation lands or credits at a conservation bank at a minimum 1:1 ratio for unavoidable permanent impacts to open space habitat. This compensatory mitigation can be satisfied under the same habitat acquisition/conservation credit program under Mitigation Measures BIO-5 and BIO-11 that is compatible for both the impacted plant and wildlife species and RAFSS/upland habitat.

Significance Conclusion

Less than significant with mitigation. Implementation of the above listed mitigation measures would reduce impacts to special-status species and habitats to a less-than-significant level.

Wetlands and Waters of the U.S./State

This section discusses the following CEQA Checklist question:

Would the project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Significance Threshold

For the purpose of this EIR analysis, the proposed project would have a significant impact if construction or operation of the project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, or hydrological interruption during the construction or operation of the proposed project.

Impact Analysis

Section 404 of the CWA regulates the discharge of dredged or fill material into waters of the U.S., including both wetlands and non-wetland bodies of water. The USACE is responsible for regulating and issuing permits for such activities within water bodies under its jurisdiction. A Wetland Delineation and Jurisdictional Determination for Crafton Hills Reservoir Enlargement was conducted by Chambers Group, Inc (2008b) and is included in Appendix E. Figure 3 and Figure 4 in Appendix E illustrate the location of all jurisdictional waters within the proposed project areas. No wetlands were found to be present within the proposed project areas. The proposed project would have no impact on wetlands as defined by Section 404 of the CWA.

The unnamed ephemeral drainage that bisects the reservoir enlargement area may be considered waters of the U.S. by the USACE and thus subject to Section 404 of the CWA (Chambers Group, Inc., 2008b) If the USACE agrees with the Jurisdictional Determination, then DWR would be required to secure a Section 404 permit from USACE prior to construction of the proposed

reservoir enlargement. No further action would be required, other than compliance with the terms and conditions of the Section 404 permit.

The features under jurisdiction of the USACE are also subject to Section 401 of the CWA, which requires a Water Quality Certification (WQC) from RWQCB. If USACE agrees with the Jurisdictional Determination, then DWR would be required to secure a Section 401 WQC from RWQCB prior to construction of the proposed reservoir enlargement. In addition, both the reservoir enlargement area and the connector pipeline area are considered waters of the State and are subject to the regulatory authority of the RWQCB under the Porter-Cologne Act. In accordance with this act, DWR would be required to secure Waste Discharge Requirements (WDRs) from RWQCB prior to construction of the proposed project. No further action would be required, other than compliance with the terms and conditions of the Section 401 WQC and WDRs.

The limits of CDFG jurisdiction, which would require Section 1600 permitting, are nearly identical to those of the RWQCB in this case. CDFG regulates all habitats associated with streams, including isolated or dry washes. In accordance with the California Fish and Game Code Section 1602, DWR would be required to secure Streambed Alteration Agreements (SAAs) prior to construction of the proposed reservoir enlargement and connector pipeline. No further action would be required, other than compliance with the terms and conditions of the SAAs.

Potentially significant impacts to jurisdictional waters would be mitigated to a less-than-significant level with implementation of the terms and conditions of the permits described above, if necessary.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. The proposed project would have no impact on wetlands as defined by Section 404 of the CWA. Compliance with terms and conditions of the required permits from USACE, RWQCB, and CDFG would ensure impacts to jurisdictional waters are less than significant. No additional mitigation is required.

Wildlife Movement Corridors

This section discusses the following CEQA Checklist question:

Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Significance Threshold

The proposed project would have a significant impact if construction or operation of the project would have a substantial adverse effect on the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. For the purpose of this EIR analysis, a substantial adverse impact would occur if the project would result in fragmentation of a habitat, removal of a wildlife nursery site, or blockage between two large areas of habitat inhibiting the safe movement of mammals and other wildlife species from one habitat area to another.

Impact Analysis

The proposed project would permanently remove approximately 19 acres of open space from the Crafton Hills due to the reservoir enlargement; however, it would not restrict wildlife movement by blocking a wildlife corridor. In general, a corridor is described as a linear habitat, embedded in a matrix of dissimilar habitat that connects two or more large blocks of habitat. The proposed reservoir enlargement area is characterized by chaparral vegetation that is similar to the surrounding hillsides and thus does not meet the definition of a wildlife corridor. The proposed reservoir enlargement would not eliminate a wildlife corridor that would restrict wildlife movement within the Crafton Hills or remove a corridor that connects the Crafton Hills to surrounding open space lands, such as the San Bernardino National Forest.

Fragmentation occurs when contiguous areas of habitat are divided into smaller, isolated patches resulting in a reduction in overall habitat area and an increase in edge habitat. Fragmentation restricts wildlife movement if species do not cross the edges of patches or the matrix of dissimilar habitat that separates patches. Inundation of the reservoir enlargement area and the construction of the two maintenance roads and spoil area would remove habitat area from the Crafton Hills and would isolate, almost fragmenting, the southeastern corner of the Crafton Hills. The proposed maintenance road that follows alongside the reservoir enlargement area would not connect all the way to the private road to the south of the spoil area; thus, a small corridor would remain between the southeastern area and the rest of the Crafton Hills. The effects of this habitat reconfiguration would differ by species; however, the corridor would allow for the safe movement of mammals and other wildlife species between the two habitat areas. Impacts to wildlife movement are considered less than significant.

Mitigation Measures

None required.

Significance Conclusion

Less than significant**.** The proposed project would result in reconfiguration of habitat in the Crafton Hills that would not result in fragmentation or blockage of corridors. Impacts to wildlife movement would be less than significant.

Local Policies, Ordinances, and Habitat Conservation plans

This section discusses the following CEQA Checklist questions:

> *Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?*
>
> *Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?*

Significance Threshold

The proposed project would have a significant impact if construction or operation of the project would conflict with any local policies or ordinances protecting biological resources, the provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional or state habitat conservation plan. For the purpose of this EIR analysis, a significant impact would result if the project conflicts with any local policies or ordinances, removes or disturbs habitat within an adopted HCP, NCCP, or other approved local, regional or state HCP.

Impact Analysis

The proposed project is not located within a federally adopted HCP or NCCP or within a Significant Ecological Area and does not conflict with any local policies protecting biological resources.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed project is not located within a federally adopted HCP or NCCP or within a Significant Ecological Area.

3.3.4 Mitigation Measure Summary Table

Table 3.3-4 presents the impacts and mitigation summary for Biological Resources.

TABLE 3.3-4
BIOLOGICAL RESOURCES IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance after Mitigation
Special-Status Species and Habitats: The proposed project would have a less than significant effect on riparian habitats or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS with implementation of mitigation measures.	BIO-1 through BIO-19	Less than significant

TABLE 3.3-4
BIOLOGICAL RESOURCES IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance after Mitigation
Wetlands and Waters of the U.S./State: The proposed project would have no impact on wetlands as defined by Section 404 of the Clean Water Act and would have a less than significant impact on jurisdictional waters of the U.S./State.	None required	Less than significant
Wildlife Movement Corridors: The proposed project would have a less than significant impact on wildlife movement.	None required	Less than significant
Local Policies, Ordinances, and Habitat Conservation Plans: The project is not located within a federally adopted Habitat Conservation Plan, Natural Community Conservation Plan, or within a Significant Ecological Area.	None required	No impact

SOURCE: ESA, 2008

3.4 Cultural Resources

3.4.1 Introduction

This section presents the environmental setting and impact assessment for cultural and paleontological resources. Cultural resources are defined as prehistoric and historic sites, structures, and districts, or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious or any other reason. For analysis purposes, cultural resources may be categorized into three groups: archaeological resources, historic resources, and contemporary Native American resources.

Archaeological resources are places where human activity has measurably altered the earth or left deposits of physical remains. Archaeological resources may be either prehistoric-era (before the introduction of writing in a particular area) or historic-era (after the introduction of writing). The majority of such places in California are associated with either Native American or Euro-American occupation of the area. The most frequently encountered prehistoric or historic Native American archaeological sites are village settlements with residential areas and sometimes cemeteries; temporary camps where food and raw materials were collected; smaller, briefly occupied sites where tools were manufactured or repaired; and special-use areas like caves, rock shelters, and sites of rock art. Historic-era archeological sites may include foundations or features such as privies, corrals, and trash dumps.

Historic resources are standing structures of historic or aesthetic significance that are generally 50 years of age or older (i.e., anything built in the year 1958 or before). In California, historic resources considered for protection tend to focus on architectural sites dating from the Spanish Period (1529-1822) through the early years of the Depression (1929-1930). Historic resources are often associated with archaeological deposits of the same age.

Contemporary Native American resources, also called ethnographic resources, can include archaeological resources, rock art, and the prominent topographical areas, features, habitats, plants, animals, and minerals that contemporary Native Americans value and consider essential for the preservation of their traditional values.

Paleontology is a branch of geology that studies the life forms of the past, especially prehistoric life forms, through the study of plant and animal fossils. Paleontological resources represent a limited, non-renewable, and impact-sensitive scientific and educational resource. As defined in this section, paleontological resources are the fossilized remains or traces of multi-cellular invertebrate and vertebrate animals and multi-cellular plants, including their imprints from a previous geologic period. Fossil remains such as bones, teeth, shells, and leaves are found in the geologic deposits (rock formations) where they were originally buried. Paleontological resources include not only the actual fossil remains, but also the collecting localities, and the geologic formations containing those localities.

3.4.2 Regulatory Framework

Cultural Resources

Numerous laws and regulations require federal, State, and local agencies to consider the effects a project may have on cultural resources. These laws and regulations stipulate a process for compliance, define the responsibilities of the various agencies proposing the action, and prescribe the relationship among other involved agencies (e.g., State Historic Preservation Office and the Advisory Council on Historic Preservation). The National Historic Preservation Act (NHPA) of 1966, as amended; the California Environmental Quality Act (CEQA); and the California Register of Historical Resources, Public Resources Code (PRC) 5024, are the primary federal and State laws governing and affecting preservation of cultural resources of national, State, regional, and local significance.

Federal

First authorized by the Historic Sites Act of 1935, the National Register of Historic Places (National Register) was established by the NHPA of 1966, as "an authoritative guide to be used by federal, State, and local governments, private groups and citizens to identify the Nation's historic resources and to indicate what properties should be considered for protection from destruction or impairment" (Code of Federal Regulations [CFR] 36 Section 60.2). The National Register recognizes both historical-period and prehistoric archaeological properties that are significant at the national, state, and local levels. In the context of the proposed project, which does not involve any historical-period structures, the following National Register criteria are given as the basis for evaluating archaeological resources.

To be eligible for listing in the National Register, a resource must be significant in American history, architecture, archaeology, engineering, or culture. Districts, sites, buildings, structures, and objects of potential significance must meet one or more of the following four established criteria (U.S. Department of the Interior 1995):

- Are associated with events that have made a significant contribution to the broad patterns of our history;
- Are associated with the lives of persons significant in our past;
- Embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- Have yielded, or may be likely to yield, information important in prehistory or history.

Unless the property possesses exceptional significance, it must be at least fifty years old to be eligible for National Register listing (U.S. Department of the Interior 1995).

In addition to meeting the criteria of significance, a property must have integrity. Integrity is defined as "the ability of a property to convey its significance" (U.S. Department of the Interior 1995). The National Register recognizes seven qualities that, in various combinations, define

integrity. To retain historic integrity a property must possess several, and usually most, of these seven aspects. Thus, the retention of the specific aspects of integrity is paramount for a property to convey its significance. The seven factors that define integrity are location, design, setting, materials, workmanship, feeling, and association.

State

The State implements the NHPA through its statewide comprehensive cultural resources surveys and preservation programs. The California Office of Historic Preservation (OHP), as an office of the California Department of Parks and Recreation, implements the policies of the NHPA on a statewide level. The OHP also maintains the California Historic Resources Inventory. The State Historic Preservation Officer (SHPO) is an appointed official who implements historic preservation programs within the State's jurisdictions.

California Register of Historical Resources

The California Register of Historical Resources (California Register) is "an authoritative listing and guide to be used by State and local agencies, private groups, and citizens in identifying the existing historical resources of the State and to indicate which resources deserve to be protected, to the extent prudent and feasible, from substantial adverse change." (California Public Resources Code § 5024.1[a]). The criteria for eligibility for the California Register are based upon National Register criteria (California Public Resources Code § 5024.1[b]). Certain resources are determined by the statute to be automatically included in the California Register, including California properties formally determined eligible for, or listed in, the National Register of Historic Places.

To be eligible for the California Register of Historical Resources, a prehistoric or historical-period property must be significant at the local, State, and/or federal level under one or more of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in prehistory or history.

A resource eligible for the California Register must meet one of the criteria of significance described above, and retain enough of its historic character or appearance (integrity) to be recognizable as a historical resource and to convey the reason for its significance. It is possible that a historic resource may not retain sufficient integrity to meet the criteria for listing in the National Register, but it may still be eligible for listing in the California Register.

Additionally, the California Register consists of resources that are listed automatically and those that must be nominated through an application and public hearing process. The California Register automatically includes the following:

- California properties listed on the National Register of Historic Places and those formally Determined Eligible for the National Register of Historic Places.
- California Registered Historical Landmarks from No. 770 onward.
- Those California Points of Historical Interest that have been evaluated by the OHP and have been recommended to the State Historical Commission for inclusion on the California Register.

Other resources that may be nominated to the California Register include:

- Historical resources with a significance rating of Category 3 through 5 (Those properties identified as eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, and/or a local jurisdiction register).
- Individual historical resources.
- Historical resources contributing to historic districts.
- Historical resources designated or listed as local landmarks, or designated under any local ordinance, such as an historic preservation overlay zone.

California Environmental Quality Act

The CEQA is the principal statute governing environmental review of projects occurring in the State. CEQA requires lead agencies to determine if a proposed project would have a significant effect on archaeological resources. CEQA is codified at Public Resources Code sec 21000 et seq. As defined in Section 21083.2 of CEQA a "unique" archaeological resource is an archaeological artifact, object, or site, about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In addition, the *State CEQA Guidelines* recognize that certain historical resources may also have significance. The Guidelines recognize that a historical resource includes: (1) a resource in the California Register of Historical Resources; (2) a resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g); and (3) any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California by the lead agency,

provided the lead agency's determination is supported by substantial evidence in light of the whole record.

If a lead agency determines that an archaeological site is a historical resource, the provisions of Section 21084.1 of CEQA and Section 15064.5 of the *State CEQA Guidelines* apply. If an archaeological site does not meet the criteria for a historical resource contained in the *State CEQA Guidelines*, then the site is to be treated in accordance with the provisions of CEQA Section 21083, which is a unique archaeological resource. The *State CEQA Guidelines* note that if an archaeological resource is neither a unique archaeological nor a historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment (*State CEQA Guidelines* Section 15064.5(c)(4)).

Paleontological Resources

Federal

A variety of federal statutes specifically address paleontological resources. They are generally applicable to a project if that project includes federally owned or managed lands or involves a federal agency license, permit, approval, or funding. Federal legislative protection for paleontological resources stems from the Antiquities Act of 1906 (PL 59-209; 16 United States Code 431 *et*. *seq*.; 34 Stat. 225), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands.

State

Paleontological resources are also afforded protection by environmental legislation set forth under CEQA. Appendix G of the *CEQA Guidelines* provides guidance relative to significant impacts on paleontological resources, stating that a project would normally result in a significant impact on the environment if it would "…disrupt or adversely affect a paleontologic resource or site or unique geologic feature, except as part of a scientific study." Section 5097.5 of the Public Resources Code specifies that any unauthorized removal of paleontological remains is a misdemeanor. Further, the California Penal Code Section 622.5 sets the penalties for the damage or removal of paleontological resources.

Professional Standards

The Society of Vertebrate Paleontology (SVP) has established standard guidelines that outline acceptable professional practices in the conduct of paleontological resource assessments and surveys, monitoring and mitigation, data and fossil recovery, sampling procedures, and specimen preparation, identification, analysis, and curation. Most qualified professional paleontologists in the nation adhere closely to the SVP's assessment, mitigation, and monitoring requirements as specifically provided in its standard guidelines. Most California state regulatory agencies accept the SVP standard guidelines as a measure of professional practice.

3.4.3 Setting

Natural Setting

The proposed project is primarily located within the unincorporated community of Crafton, San Bernardino County, California. The San Bernardino National Forest is north and east of the proposed project, the City of Yucaipa is to the south and the City of Redlands and community of Mentone are to the west. A majority of the project to the south lies within the Crafton Hills with the remainder running adjacent and parallel to Mill Creek in the north. Much of the existing reservoir is surrounded by undeveloped land managed by the Crafton Hills Open Space Conservancy. There are, however, residential neighborhoods located 500 feet east and south of the existing reservoir.

The surrounding vegetation is characterized as chaparral and grassland, which is typical in low rainfall areas, such as the current study area. The drainage that will be occupied by the reservoir enlargement is a very ephemeral stream. Some of the more common species observed throughout the project area include chamise (*Adenostoma fasciculatum*), black sage (*Salvia mellifera*), California buckwheat (*Eriogonum fasciculatum*), and needlegrass (*Achnatherum* sp.).

Geologic (Paleontological) Context

The proposed project area lies within the geologically complex region of the northeastern Los Angeles Basin, at the convergence of the Transverse Ranges Province and the northern part of the Peninsular Ranges Province. These provinces are characterized by active faults displacing granite that was originally placed during the mountain building events in the Sierra Nevada. The complex tectonic and geologic history is expressed through the hilly topography consisting of deep valleys, steep slopes and flat outwash plains.

The proposed connector pipeline alignment corridor is located near the southern flanks of the San Bernardino Mountains and within the 100-year flood channel of the Mill Creek Wash; this wash slopes gradually to the west at elevations ranging from about 1,500 feet to 2,400 feet above mean sea level (amsl). Young alluvial and fluvial deposits composed primarily of granite boulders, cobbles, gravel and sand mixtures, including minor amounts of sedimentary rock detritus underlie the proposed pipeline alignment. These alluvial materials are derived from the San Bernardino Mountains and minor amounts from the Crafton Hills, located southwest of the connector pipeline project area.

The proposed reservoir enlargement area is located at the eastern edge of the Crafton Hills, which are primarily comprised of formations containing Mesozoic mylonitic and cataclastic granitoid bedrock. Both this formation and the young alluvium which underlies the pipeline alignment have low paleontologic sensitivity. It is possible that the young alluvium overlies older Pleistocene-age alluvium, a formation that has been known to produce fossils of Ice Age animals including mammoths, mastodons, dire wolves, horses, camels, and bison; however, such fossils are typically found at depths of greater than 15 feet (Scott 2007).

Prehistoric Context

The chronological breakdown of the prehistory of the project area and its surrounding region is continually being debated and revised. Several different chronological systems have been proposed, each with their own unique terminology and chronological division. Warren (2004) provides a concise discussion of current scholarship pertaining to the chronology of the history of the deserts of Southern California and proposes a single chronological system for the California Desert Region, which includes four primary prehistoric periods: the Pinto, the Gypsum, the Saratoga Springs, and the Protohistoric.

The Pinto Period (circa [c.] 5,000 to 2,000 B.C.)

Small, un-developed surface deposits dating from the Pinto Period suggest that Pinto settlement patterns consisted of temporary or seasonal occupation by small, migratory groups that were dependent upon a combination of big and small-game hunting and collection strategies which could include the exploitation of stream or water resources. Typically, sites of this period are found along lake shores and streams or springs, some of which are now dry. Material culture representative of this period in California prehistory include roughly formed projectile points, "heavy-keeled" scrapers, choppers, and the occasional use of flat millingstones and manos (Warren 2004:411).

Gypsum Period (c. 2,000 B.C. to A.D. 500)

It is during this time that we see archaeological evidence suggestive of inter-tribal trade, particularly between the desert and the coast. The artifact assemblage associated with this period includes an increase in the prevalence of millingstones and manos, and it is believed that it was during this period that the pestle and mortar were introduced. These technological developments may point to the increased consumption of seeds and mesquite. Other artifacts associated with the Gypsum Period include Humboldt Concave Base, Gypsum Cave, Elko Eared, and Elko Corner-notched projectile points. Towards the end of the Gypsum period, there is evidence for the use of the bow and arrow (Warren 2004:415).

Saratoga Springs Period (c. A.D. 500 to 1,200)

The general cultural pattern for this period is a continuation of that of the preceding Gypsum Period. The increase in cultural complexity continued into this period and the archaeological record attests to established trade routes between desert and coastal populations by way of shell beads and steatite, as well as an introduction of Anasazi influence from the eastern Great Plains as evidenced by the appearance of turquoise and pottery. Material culture related to this period includes Rose Spring and Eastgate projectile points, millingstones, manos, mortars and pestles, slate pendants, and incised stones (Warren 2004:422).

The Protohistoric Period (A.D. 1,200 to European Contact)

By the Protohistoric period, an extensive network of established trade routes wound their way through the desert, shuffling quality goods to populations throughout the Mojave Region. It is also believed that these trade routes encouraged or were the motivating factors for the

development of an "increasingly complex socioeconomic and sociopolitical organization" within Protohistoric peoples in the Southern California area. Housepit village sites are prevalent during this period, as are the presence of Desert Side-notched and Cottonwood projectile points, pottery, steatite shaft straighteners, painted millingstones, and to a lesser degree, coastal shell beads. By the end of this period, however, a decline in trade occurred and well-established village sites were abandoned (Warren 2004:425).

Ethnographic Background

At the time of European contact, the project area was inhabited by the Serrano and the Cahuilla. Both the Serrano and the Cahuilla occupied territories that ranged from low or moderately low desert to the mountain regions of the Transverse and Peninsular ranges, with the Serrano inhabiting the north and the Cahuilla holding the south. Both groups adapted to and inhabited the terrain in a similar manner. Villages located at higher elevations were placed near canyons that received substantial precipitation or were adjacent to streams and springs. Villages situated at lower elevations were also located close to springs or in proximity to the termini of alluvial fans where the high water table provided abundant mesquite and shallow wells could be dug. Although the two groups were independent of one another, village communities often interacted with each other (Altschul et al. 1984; Bean 1978; Bean and Smith 1978; Warren 2004).

Serrano territory was bordered to the west by the Cajon Pass in the San Bernardino Mountains, to the east by Twenty-nine Palms and to the south by Yucaipa Valley. The Serrano subsistence strategy relied upon hunting and gathering, and occasionally fishing. The division of labor was split between women gathering and men hunting and fishing (Altschul et al. 1984; Bean and Smith 1978; Warren 2004). Mountain sheep, deer, rabbits, acorns, grass seeds, piñon nuts, bulbs, yucca roots, cacti fruit, berries, and mesquite were some of the more common resources utilized (Bean and Smith 1978; Warren 2004).

The Serrano were organized into clans, with the clan being the largest autonomous political entity. They lived in small villages where extended families lived in circular, dome- shaped structures made of willow frames covered with tule thatching. Despite early European and Spanish contact in 1771 and 1772, respectively, the Serrano remained relatively autonomous until the period between 1819 and 1834 when most of the western Serrano were removed and placed into missions (Bean 1978; Bean and Smith 1978; Warren 2004).

As with the Serrano, the Cahuilla occupied high-altitude locations as well as low desert lands, with villages positioned in close proximity to plentiful water sources near fresh water sources. House structures of the Cahuilla ranged from "brush shelters to dome-shaped or rectangular structures 15-20 feet long" (Altschul et al. 1984; Bean 1978; Warren 2004). The Cahuilla social structure revolved around clans and exogamous moieties (components connected through inter-marriage). Hunting, in conjunction with the exploitation of a variety of available resources governed the Cahuilla subsistence strategy in much the same way as the Serrano.

The material culture of the Cahuilla was extensive and varied, and included pottery, ornamental items, charmstones, and a number of knapped stone tools. Unlike other Native American

populations in Southern California, the Cahuilla were able to retain their autonomy even after the arrival and increasing control of European explorers and the settling governments that followed. It was not until 1891 that the Cahuilla culture and its population began to succumb to the pressure of European and, later, United States governing bodies (Altschul et al. 1984; Bean 1978; Bean & Smith 1978; Warren 2004).

Historical Background

The historical setting for the project area under discussion is summarized into three primary periods: The Mission Period (A.D. 1769 – A.D. 1822), the Mexican or Rancho Period (A.D. 1822 – A.D. 1848), and from A.D. 1848 to the present.

The Mission Period (A.D. 1769 – A.D. 1822)

Upon the arrival of Spanish explorers to the area, a network of missions was constructed along the Pacific Coast of Baja California and, later, Alta California, which encompasses modern-day California. It was the aim of these missions to repeat a strategy employed by the Spanish in the area now known as Mexico (Brower 1996). This strategy was to encourage, by any means necessary, the assimilation of Native populations to adopt the Spanish custom, language, and religion. The nearest mission to the project area was the Mission San Gabriel, in the San Gabriel Valley about 60 miles to the west.

Pedro Fages, Spanish Military Commander of California, was the first European known to have explored the area in 1772. However, it was not until 1810 that the valley was named San Bernardino by a Franciscan missionary from the San Gabriel mission.

With the opening of overland routes, Spanish pueblos were established, evolving into the Spanish system of governance. In 1810, the population of New Spain revolted against high taxes and unfair laws. In 1821, the war was over and New Spain won its independence, becoming the Republic of Mexico; the lands of Alta California were included as part of the newly formed Republic (Brower 1996).

The Mexican Period (A.D. 1822 – A.D. 1848)

With the late entry of Alta California into the fold of the Mexican-controlled territories, the years that followed involved the establishment and expansion of Mexican governorships throughout California. In the 1830s, the missions began to be desecularized. Large expanses of mission land became ranchos or land grants that were given to prominent individuals (Brower 1996). In 1842, the Lugo family was granted Rancho San Bernardino, spanning 37,700 acres and spanning the entire San Bernardino Valley. In 1851, the Rancho was sold to a group of Mormon colonists led by Captain Jefferson Hunt.

The following years were dominated by strategic attempts of wealthy and politically significant persons to gain control of more lands for cattle. Despite these struggles, as well as sporadic Native American uprisings, trade and agriculture continued to flourish. It was towards the later term of this period that the slow infiltration of Americans into California began. Unrest amongst

the population of California increased and with it, a growing disdain for Mexican governorship and an ever-growing foreign population.

As the number of foreign elements within the boundaries of present-day California increased, so too did foreign interest in the acquisition of the region. The United States made a bold move towards the acquisition of western territories by positioning military forces to actively engage the Mexican military, thus beginning the Mexican-American War (A.D. 1846 – A.D. 1848). With the success of U.S. forces against the Mexicans, the Treaty of Guadalupe Hidalgo was drafted and signed, bringing an end to the conflict and giving control over Alta California, along with other regions in the present-day American Southwest, to the American government.

A.D. 1848 – Present

In 1850, two years after the discovery of gold in the mountains of eastern California, California entered into the Union as the 31st state of the United State of America. As a result of the discovery of gold and the mass migration of fortune-hunters to both southern and northern California, the population of the region exploded and development of urban areas grew.

By the late 19th century, citrus-growing and cattle were the principle industries in the region. The discovery of gold, borax, and silver drew scores of miners to the area, further displacing the local Native Americans. In 1893 the San Manuel Reservation was established in response to this displacement

As the prominence of agriculture in the region grew, so too did the need for water. Initially, water conveyance projects were small and localized, as with the Mill Creek Zanja in 1820 by the Guachama Indians. Region-wide water systems were initiated in the 1890s. The State Water Project, a now-600-mile-long water storage and conveyance system for the State of California, was approved by the California Legislature in 1951, with construction beginning in 1957 and continuing into the present day. The terminus of the Water Project is Lake Perris, southwest of the project location.

Methods

Archaeological and Historic Resources

Archival

On November 2, 2007, an archival record search was performed at the San Bernardino Archaeological Information Center (SBAIC) of the California Historical Resources Information System at the San Bernardino County Museum. The purpose of this search was to identify previous archaeological/historical investigative activity and previously recorded cultural resources within 0.25 miles of the proposed project's area of potential effect (APE). This records search included an examination of previous survey coverage and reports, historic maps, and known cultural resources within a 0.25-mile radius of the project site. Other sources that were reviewed included the California Register of Historic Places (California Register), the National

Register of Historic Places (National Register), the California State Historic Resources Inventory (HRI).

Field Methods

An archaeological field survey of the APE was performed by DWR Archaeologist Tiffany A. Schmid and Senior Environmental Planner Janis K. Offermann on March 4, 2008 and June 18, 2008. Areas surveyed included the reservoir expansion footprint and adjacent proposed maintenance road, the spoil area, the borrow source originally used for the existing reservoir, the 1.25-acre staging and supplemental borrow area, the 1-acre load restricted staging area located to the west and east of the reservoir access road, and the Yucaipa Pipeline and associated staging areas. The area was surveyed in 10-meter transects.

Native American Correspondence

The Native American Heritage Commission (NAHC) was contacted on December 5, 2007 to request a database search for sacred lands or other cultural properties of significance to local Indian people. The Commission also provided a list of people or organizations that might have specific information regarding cultural resources in the project area, or who may have an interest in the current project. The Cahuilla Band of Indians, the Ramona Band of Mission Indians, the San Manuel Band of Mission Indians, the Gabrielino Band of Mission Indians of California, the Morongo Band of Mission Indians, and the Serrano Nation of Indians were all contacted.

Paleontological Resources

A project-specific search of the San Bernardino County Museum's paleontological literature, maps, and fossil records was performed on November 7, 2007 (Scott, 2007).

Results

Archaeological and Historic Resources

Archival

The archival search did not identify any previously recorded cultural resources within the project area. Four cultural resources were identified within 0.25 miles of the project area, including a historic road and three mining sites. Numerous other mining sites are located within 1 mile of the project area. Two previous cultural resources studies were conducted within 0.25 miles of the project area, both of which abut and overlap a small portion of the Yucaipa Connector Pipeline.

Since the archival search was completed, the project description was refined and the APE expanded to include the proposed maintenance road below the existing dam. An additional archival search for cultural resources within 0.25 miles of this proposed roadway alignment would be required prior to implementation of this project component.

Native American Correspondence

The Sacred Lands Files database search performed by the NAHC did not indicate the presence of Native American sacred lands in the project area. To date, no responses have been received from those Native American representatives contacted.

Field Survey

The field investigations conducted by DWR resulted in the identification of three newly recorded cultural resources described below. Since the field surveys were completed, the project description was refined and the APE expanded to include the proposed maintenance road below the existing dam. An additional field survey of this proposed roadway alignment would be required prior to implementation of this project component.

CH-GPS6

The site is located adjacent to the proposed Yucaipa Connector Pipeline. Cultural constituents included a small can dump that consisted of four cans: a gallon paint can, a pint can, and two sanitary cans. There was also a metal ring approximately 24 inches in diameter, an enamel pot, and what appeared to be the box spring from the seat of a car. The total dump encompassed an area approximately 20 feet east to west by 5 feet north to south.

CH-GPS7

The site is located adjacent to the proposed Yucaipa Connector Pipeline. Cultural constituents included a large, modern debris scatter/trash dump that consisted of chunks of asphalt, roofing shingles, two glass Gatorade bottles, a light green ceramic plant pot, several one gallon paint cans, a piece of barrel strapping, barbed wire, and approximately 100 other miscellaneous metal cans. The total dump encompassed an area approximately 50 feet east to west by 50 feet north to south.

CH-GPS9

The site was located within the 1.5-acre supplemental borrow area. Cultural constituents included an apparent ditch at the base of a slope to the southeast. The ditch had an average width of 10 feet and ran for approximately 525 feet in a southwest to northeast direction at which point it faded away into the topography. It appears that its origin was at the base of natural drainage that flowed down through the adjacent hills to the southwest.

Paleontological Resources

A search of the San Bernardino County Museum's paleontological literature, maps, and fossil locality records indicated that no fossils or fossil localities had been found in the project area or within one mile of the project area. The area was deemed to have a low sensitivity for paleontological resources, and no program of action was recommended by the Museum (Scott, 2007).

3.4.4 Impact Assessment

For the purposes of this EIR and consistent with Appendix G of the *CEQA Guidelines*, the proposed project is considered to have a significant impact if it would result in any of the following:

- A substantial adverse change in the significance of a historical resource that is either listed or eligible for listing in the National Register, the California Register, or a local register of historic resources;
- A substantial adverse change in the significance of a unique archaeological resource;
- Disturbance or destruction of a unique paleontological resource or site or unique geologic feature; or
- Disturbance of any human remains, including those interred outside of formal cemeteries.

CEQA provides that a project may cause a significant environmental effect where the project could result in a substantial adverse change in the significance of a historical resource (Public Resources Code, Section 21084.1). *CEQA Guidelines* Section 15064.5 defines a "substantial adverse change" in the significance of a historical resource to mean physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be "materially impaired" (*CEQA Guidelines*, Section 15064.5[b][1]).

CEQA Guidelines, Section 15064.5(b)(2), defines "materially impaired" for purposes of the definition of "substantial adverse change" as follows:

The significance of a historical resource is materially impaired when a project:

- Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
- Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in a historical resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
- Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

In accordance with *CEQA Guidelines* Section 15064.5(b)(3), a project that follows the Secretary of the Interior's *Standards for the Treatment of Historic Properties* is considered to have mitigated impacts to historic resources to a less-than-significant level.

Historic resources are usually 50 years old or older and must meet at least one of the criteria for listing in the California Register (such as association with historical events, important people, or architectural significance), in addition to maintaining a sufficient level of physical integrity (*CEQA Guidelines* Section 15064.5[a][3]).

Archaeological and Historical Resources

This section discusses the following CEQA Checklist questions:

> *Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?*
>
> *Would the project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?*

Significance Threshold

A project would have a significant adverse affect on archaeological resources if the project would cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Section § 15064.5

A project would have a significant adverse impact on an historical resource if the project would cause a change in the significance of a historical resource that is either listed or eligible for listing in the National Register of Historic Places, the California Register of Historical Resources, or a local register of historic resources in accordance with *CEQA Guidelines*, §15064.5.

Impact Analysis

Three archaeological sites may be impacted by the proposed project. Two (CH-GPS6 and CH-GPS7) are located near the Yucaipa Connector Pipeline route and the third (CH-GPS9) is located in the 1.5-acre supplemental borrow area and 1.25-acre staging and supplemental borrow area. None of the archaeological resources identified have been evaluated for the National Register of Historic Places (NRHP) pursuant to 36 CFR 800 and 36 CFR 60, or the California Register of Historical Resources (CRHR) under California Public Resources Code 5024. However, they will be treated as significant resources until they are formally evaluated.

In addition to these sites, numerous historic-era mining sites are known to exist within 0.25 miles of the project area; therefore, there is a possibility that additional buried historic-era cultural resources are present within the project area. Ground-disturbing construction activities would have the potential to directly impact cultural or archaeological resources within the project area by disturbing both surface and subsurface soils. These resources could be prehistoric or historic. The inadvertent destruction of potentially significant cultural resources by construction operations would be a significant impact. Mitigation Measures CR-1, CR-2, and CR-3 would be required to reduce impacts to a less-than-significant level.

The proposed maintenance road to be located below the existing dam was not included in the APE when the archival search and field surveys were conducted for the proposed project. Mitigation Measure CR-4 would ensure that this project component is surveyed and evaluated appropriately for cultural resources prior to construction. Any potential impacts to known or unknown cultural resources along this roadway corridor would be reduced to less than significant levels by implementation of Mitigation Measures CR-1, CR-2, and CR-3.

Mitigation Measures

CR-1: Avoidance. DWR shall narrow the construction zone to avoid sites CH-GPS6, CH-GPS7, and CH-GPS9 where feasible. Prior to construction, a qualified archaeologist (defined as an archaeologist meeting the Secretary of the Interior's Standards for professional archaeology) shall mark exclusion zones around known archaeological sites that can be avoided to ensure they are not impacted by construction. Ground-disturbing activities, including brush clearance and grading, occurring within 100 feet of sites CH-GPS6, CH-GPS7, and CH-GPS9 shall be monitored by a qualified archaeologist.

CR-2: Evaluation. If avoidance is not feasible, prior to any ground disturbing activity, sites CH-GPS6, CH-GPS7, and CH-GPS9 shall be evaluated further by a qualified archaeologist to determine their potential significance. The qualified archaeologist shall prepare a report evaluating each known archaeological site and noting whether the site could be significant. The report will determine whether additional evaluation would be required prior to the destruction of each site. The report will also conclude whether a monitor is necessary on site during excavation activities. DWR shall consult with the SHPO to determine the eligibility of resources as historic properties, and the effect of the proposed project on identified historic properties. DWR shall implement additional data recovery if requested by SHPO.

CR-3: Inadvertent Discovery. In the event that any prehistoric or historic subsurface cultural resources are discovered during ground disturbing activities, all work within 50 feet of the resources shall be halted and DWR shall consult with a qualified archaeologist to assess the significance of the find. If any find is determined to be significant, representatives of DWR and the qualified archaeologist would meet to determine the appropriate course of action. All significant cultural materials recovered shall be subject to scientific analysis, professional museum curation, and a report prepared by the qualified archaeologist according to current professional standards.

CR-4: Additional Phase I Surveys. A Phase I cultural resources survey shall be conducted for the proposed maintenance road below the existing dam, including appropriate archival records searches and field surveys. Following completion of the Phase I cultural resources survey, Mitigation Measures CR-1 and CR-2 shall also be applied to any additional known or newly recorded cultural sites within the APE of the proposed maintenance road.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measures CR-1, CR-2, CR-3, and CR-4 would reduce impacts to archaeological resources by narrowing the construction zone to avoid any known archaeological resources, and by requiring a qualified archaeologist to assess the significance of any unanticipated discoveries.

Native American Resources and Human Remains

This section discusses the following CEQA Checklist question:

> *Would the project disturb any human remains, including those interred outside of formal cemeteries?*

Significance Threshold

A significant impact would result if buried human remains are uncovered during construction.

Impact Analysis

The accidental discovery of burials falls under Health and Safety Code 7050.5. More specifically, remains suspected to be Native American are treated under CEQA at §15064.5 and guidance found at Public Resources Code §5097.98 (amended in 2006 by AB 2641) that describes the process to be followed in the event that remains are discovered. No Native American Resources were identified following appropriate consultation with the NAHC and identified tribes. While no impacts are expected, in the event of the unexpected discovery of human remains, the following mitigation measure would be required.

Mitigation Measures

CR-5: If human remains are discovered during construction activities, no further disturbance to the site shall occur until the County Coroner is notified. If the coroner determines the remains to be Native American, the coroner shall notify the Native American Heritage Commission within 24 hours. The Native American Heritage Commission shall identify the person or persons it believes to be the Most Likely Descended of the deceased. Under the amended 5097.98, the Most Likely Descended is required to make recommendations for treatment of any remains. DWR shall cease construction activities at the discovery site until the remains have been removed and the site cleared by Native American Heritage Commission and the County Coroner.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measure CR-5 would reduce the impact by requiring that the County Coroner be notified if human remains are discovered during construction activities.

Paleontological Resources

This section discusses the following CEQA Checklist question:

> *Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?*

Significance Threshold

A project would have a significant adverse impact on a paleontological resource if the project would disturb or destroy a unique paleontological resource or site or unique geologic feature as described in *CEQA Guidelines*, Section §15064.5.

Impact Analysis

Paleontological resources are fossilized evidence of past life found in the geologic record. Despite the huge volume of sedimentary rock deposits preserved worldwide and the enormous number of organisms that have lived through time, preservation of plant or animal remains as fossils is an extremely rare occurrence. Because of the infrequency of fossil preservation, fossils (particularly vertebrate fossils) are considered to be nonrenewable resources. Because of their rarity and the scientific information they can provide, fossils are highly significant records of ancient life. Paleontological resource localities are sites where the fossilized remains of extinct animals and/or plants are found.

Both geologic formations underlying the project area, the young alluvium and the Mesozoic bedrock, have a low paleontologic sensitivity. It is possible, although not definitively known, that the young alluvium, which is present in the Yucaipa Connector Pipeline project area, may overlie older Pleistocene-age alluvium, a formation that has been known to produce significant fossils; however, such fossils are typically found at depths greater than 15 feet and would not likely be uncovered by the proposed project construction activity (Scott, 2007).

A search of the San Bernardino County Museum's paleontological literature, maps, and fossil locality records indicated that no fossils or fossil localities had been found in the project area or within one mile of the project area. The area was deemed to have a low sensitivity for paleontological resources, and no program of action was recommended by the Museum (Scott 2007). Therefore, the proposed project would not have a significant impact on paleontological resources.

Mitigation Measures

CR-6: If paleontological resources are encountered during the course of construction and monitoring, the applicant shall halt or divert work and notify a qualified paleontologist who shall document the discovery as needed, evaluate the potential resource, assess the significance of the find, and develop an appropriate treatment plan in consultation with the applicant.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measure CR-6 would reduce impacts by requiring consultation with a qualified paleontologist if fossil resources are discovered during construction.

3.4.5 Mitigation Measure Summary Table

Table 3.4-1 presents the impacts and mitigation summary for Cultural Resources.

TABLE 3.4-1
CULTURAL RESOURCES IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance After Mitigation
Archeological Resources: Construction of proposed facilities would have a less-than-significant impact on known or unknown cultural resources with mitigation.	CR-1, CR-2, CR-3, CR-4	Less than significant
Native American Resources: Construction of proposed facilities would have a less-than-significant impact on unknown buried cultural resources with mitigation.	CR-5	Less than significant
Paleontological Resources: Construction of proposed facilities would have a less-than-significant impact on paleontological resources with mitigation.	CR-6	Less than significant

SOURCE: ESA, 2008

3.5 Geology, Soils, Seismicity and Mineral Resources

This chapter describes the geologic conditions within the project area and evaluates whether those conditions would result in geologic or seismic hazards to the proposed project. The chapter also evaluates whether the proposed project would cause geologic hazards, increase seismic risk, or adversely affect a mineral resource.

3.5.1 Regulatory Framework

State

Division of Safety of Dams

Since 1929, the State of California has supervised the construction and operation of dams to prevent failure, safeguard life, and protect property. The California Department of Water Resources Division of Safety of Dams (DSOD) oversees the construction, enlargement, alteration, repair, maintenance, operation, and removal of dams and reservoirs. The DSOD has jurisdiction over all non-federal dams in the State that are 25 feet or higher (regardless of storage capacity) and dams with a storage capacity of 50 af of water or greater (regardless of height). The DSOD becomes involved in the design and construction of a new jurisdictional dam at conception and remains involved through construction to ensure that the dam conforms to the strict engineering and seismic standards set forth by the State of California. Dams 6 feet or less in height (regardless of storage capacity) or dams with a storage capacity of 15 af or less (regardless of height) are not under DSOD jurisdiction. The existing Crafton Hills Reservoir and the proposed enlarged reservoir are under DSOD jurisdiction and DSOD will review the proposed designs and inspect the enlarged reservoir project through completion.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (formerly the Alquist-Priolo Special Studies Zone Act) signed into law in December of 1972, requires the delineation of zones along active faults in California. The purpose of the Alquist-Priolo Act is to regulate development on or near active fault traces to reduce the hazard of fault rupture and to prohibit the location of most structures for human occupancy across these traces. Cities and counties must regulate certain development projects within the zones, which includes withholding permits until geologic investigations demonstrate that development sites are not threatened by future surface displacement (Hart, 1997). Surface fault rupture is not necessarily restricted within an Alquist-Priolo Earthquake Fault Zone (APEFZ). The proposed reservoir enlargement area is not located within an APEFZ. However, the proposed connector pipeline is located within the APEFZ for the San Andreas fault.

California Building Code

The California Building Code (CBC) is a body of regulations also known as the California Code of Regulations, Title 24, Part 2. Title 24 is assigned to the California Building Standards

Commission which, by law, is responsible for administering, adopting, approving, publishing, and implementing all building standards in California.

Published by the International Code Council, the International Building Code (IBC) is a widely adopted national model building code in the United States. The 2007 CBC incorporates the 2006 IBC by reference and includes necessary California amendments. These amendments include criteria for seismic design, and approximately one-third of the CBC has been tailored to California earthquake conditions. The CBC provides engineering design criteria for grading, foundations, retaining walls, and structures within zones of seismic activity. Under the CBC, facilities are assigned seismic design categories (A through F) which are based on spectral response accelerations, soil classifications and properties, and occupancy categories. The higher the seismic design category, the more stringent the design criteria are required.

3.5.2 Setting

Geologic Setting

The geologic background information in this section is sourced from the Geologic Report (November 1999) and Final Construction Geology Report (August 2001) for the East Branch Extension Phase 1, the City of Yucaipa General Plan (2004), and the San Bernardino County General Plan (2007).

The proposed project area lies within the geologically complex region of the northeastern Los Angeles Basin, at the convergence of the Transverse Ranges Province [1] and the northern part of the Peninsular Ranges Province. These provinces are characterized by active faults displacing granite that was originally placed during the mountain building events of the Sierra Nevada. The complex tectonic and geologic history is expressed through the hilly topography consisting of deep valleys, steep slopes and flat outwash plains.

The proposed connector pipeline alignment corridor is located near the southern flanks of the San Bernardino Mountains and within the 100-year flood channel of the Mill Creek Wash; the wash elevation gradually decreases, from 2,400 feet to 1,500 feet above mean sea level (amsl) with the westward course of the channel. Recent alluvial and fluvial deposits composed primarily of granite boulders, cobbles, gravel and sand mixtures, including minor amounts of sedimentary rock detritus underlie the proposed project area. These alluvial materials primarily originate in the San Bernardino Mountains though minor quantities have originated in the Crafton Hills.

The proposed reservoir enlargement area is located at the eastern edge of the Crafton Hills, which are at the southern edge of the San Bernardino Mountains. The Crafton Hills range from approximately 2,000 to 3,500 feet amsl. Similar to the existing Crafton Hills reservoir, the proposed reservoir enlargement area would be located primarily on crystalline bedrock composed of crystalline igneous and metamorphic rocks. The metamorphic rock is distinctive in its multiple

[1] A geomorphic province is an area that possesses similar bedrock, geologic structure, history, and age. California has 11 geomorphic provinces (CGS, 2002).

folded layers and coarse grain. The metamorphic rocks include diorite, gneiss, metadiorite, quartzite, schist, and marble (DWR, 1999). These rocks are not considered to be ultramafic rocks, which can contain naturally-occurring asbestos (Department of Conservation, 2000). There are no known occurrences of ultramafic rocks in San Bernardino County (Department of Conservation, 2000).

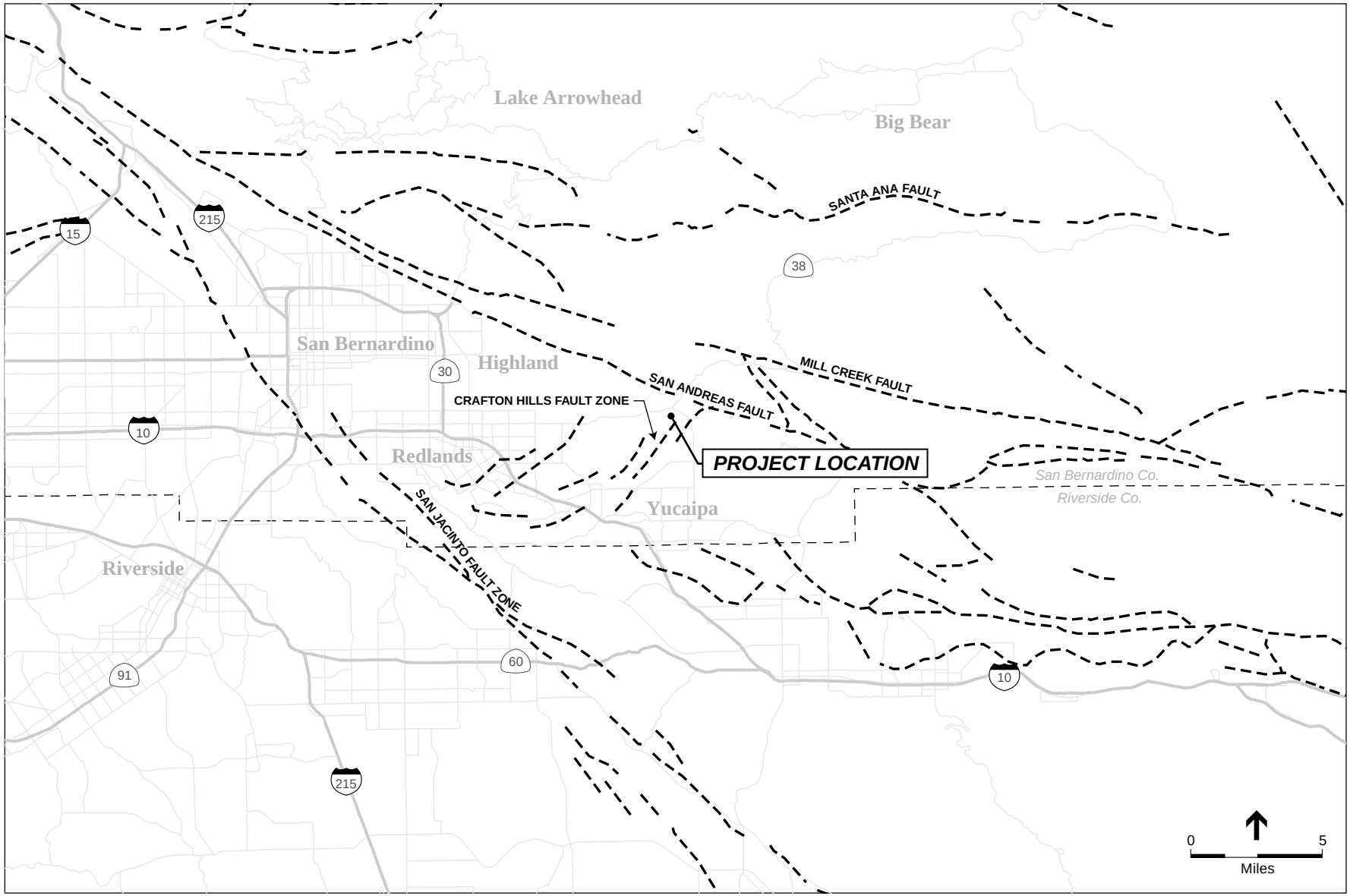
Seismic Setting

The proposed project is located in a region of high seismic activity. The San Andreas Fault System (SAFS), forming the boundary between the North American and Pacific crustal plates, is expressed as a series of northwest-trending faults (Jennings, 1994). The SAFS consists of the Mill Creek, Wilson Creek, San Bernardino and Mission Creek strands. Other nearby faults include the Chicken Hill fault, Western Heights fault, San Jacinto fault, Banning fault, Crafton Hills fault, Greenspot fault, Arrowhead fault and the San Gorgonio Fault Zone. **Figure 3.5-1** identifies faults in the project region.

Many individual faults within the SAFS have produced strong earthquakes in the past and are expected to do so in the future. The San Jacinto fault, which historically is the most seismically active fault in the immediate area, branches from the San Andreas fault in the San Gabriel Mountains. The active[2] San Andreas Fault Zone traverses in a northwest direction along the southern flanks of the San Bernardino Mountains. The San Andreas fault is a strike slip fault; this means that the relative motion is parallel to the direction of the fault and during an earthquake; the ground on either side of the fault would be displaced laterally. A portion of the proposed connector pipeline is adjacent to the San Andreas Fault South Branch and is within the APEFZ for this fault (**Figure 3.5-2**). The proposed reservoir enlargement area is approximately 3,500 feet to the southwest of the San Andreas Fault South Branch and is not included in the APEFZ for this fault (Figure 3.5-2).

The Crafton Hills fault is located between the San Andreas fault to the north and east and the San Jacinto fault to the south and west. The Crafton Hills fault is located on the southern side of the Crafton Hills, about a mile south of the proposed reservoir enlargement area (**Figure 3.5-2**). This fault has been characterized as a normal fault (Wesnousky, 1986) and exists due to the presence of the San Andreas and San Jacinto right-lateral slip faults on either side. The Crafton Hills fault is an active fault (Jennings, 1994) as it has evidence of rupture during the Holocene era, or the last 10,000 years. The proposed project is not located within the APEFZ for the Crafton Hills fault, as illustrated in Figure 3.5-2.

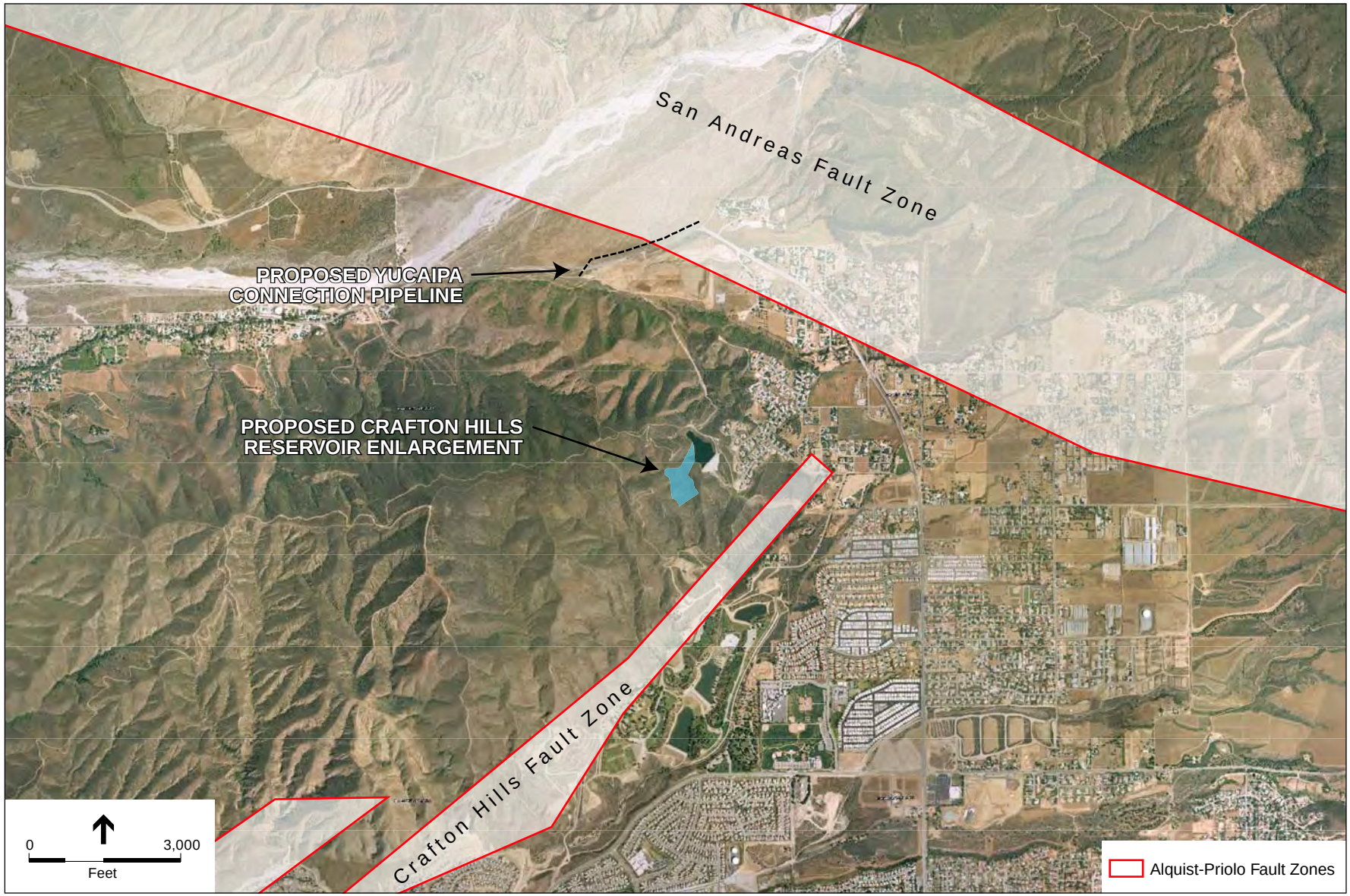
[2] An "active" fault is defined by the State of California as a fault that has had surface displacement within Holocene time (approximately the last 10,000 years). A "potentially active" fault is defined as a fault that has shown evidence of surface displacement during the Quaternary (last 1.6 million years), unless direct geologic evidence demonstrates inactivity for all of the Holocene or longer. (Hart, 1997).



SOURCE: Street Map USA, 2007; USGS, 2008.

DWR - Crafton Reservoir . 206008.04

Figure 3.5-1
Regional Faults



SOURCE: GlobeXplorer, 2007; USGS, 2008.

DWR - Crafton Reservoir . 206008.04

Figure 3.5-2

Alquist-Priolo Fault Zones

The Working Group on California Earthquake Probabilities predicts that southern California should experience a magnitude 7.0 or greater earthquake about seven times each century[3]. About half of these will be on the SAFS (the San Andreas, San Jacinto, Imperial, and Elsinore Faults) and half will be on other faults. The equivalent probability of an earthquake occurring on the San Andreas in the next 30 years is 85 percent. The location and other information, including historic activity and maximum expected moment magnitude (Mw), of regionally significant active faults in the proposed project area, are provided in **Table 3.5-1**.[4]

TABLE 3.5-1
ACTIVE FAULTS IN THE PROJECT SITE VICINITY

Fault	Location and Direction		History of Recent Movement	Fault Classification[a]	Historical Seismicity[b]	Maximum Moment Magnitude[c]
	Reservoir	Pipeline				
San Andreas (South Branch Segment)	3,500' northeast	100' east	Historic (1812, 1857 ruptures), Holocene	Active	M7.3 1812 M7.9 1857	8.3
Crafton Hills fault zone	5,600' south	8,000' south	Historic (2005)	Active	M4.5 (2005)	No Data
San Jacinto	7.6 miles southwest	9 miles southwest	Historic (1899, 1968)	Active	M6.7 1899 M6.5 1968	8.5

a An "Active Fault" is defined by the California Geological Survey as one which has displayed surface displacement within Holocene time (about the last 10,000 years).
b Magnitude (M) Richter or , and year for recent and/or large events.
c Maximum moment magnitude (Mw) is related to the physical size of a fault rupture and movement across a fault. Mw provides a physically meaningful measure of the size of a faulting event [(CGS, 1997)]. The Maximum Moment Magnitude Earthquake, derived from the joint CDMG/USGS Probabilistic Seismic Hazard Assessment for the State of California, 1996. (Peterson, et al., 1999).

SOURCES: Jennings, 1994; Hart, 1997, CGS, 1997

Geologic and Seismic Hazards

The CGS and USGS recently published *The ShakeOut Scenario* (Jones et. al. 2008), which modeled a magnitude (*M*) 7.8 earthquake on the southern San Andreas Fault, a plausible event on the fault most likely to produce a major earthquake. The goal of *The ShakeOut Scenario* is to "identify the physical, social and economic consequences of a major earthquake in southern California and in so doing, enable the users of our results to identify what they can change now—*before* the earthquake—to avoid catastrophic impact *after* the inevitable earthquake occurs". The report indicates that damage to utilities, lifelines, and infrastructure, including water pipelines, would be extensive. Although California has been conducting seismic upgrades to bridges and buildings, which will prove beneficial during an earthquake of this magnitude, *The ShakeOut Scenario* states the following:

3 The Working Group on California Earthquake Probabilities has a goal to develop a statewide, time-dependent Earthquake Rupture Forecast that uses best available science and is endorsed by the United States Geological Survey (USGS), the Southern California Earthquake Center (SCEC), and the California Geological Survey (CGS).
4 The *maximum* Mw is the largest earthquake that appears capable of occurring on a fault, based on empirical relationships between fault length, fault rupture length, and historic earthquake magnitudes.

> Significant vulnerabilities remain in the water conveyance system and in the lifelines that cross the San Andreas Fault. Pipes of concrete and iron are brittle and break in many places in an earthquake. The number of pipe breaks will be large enough that recreating the water system will be necessary in the hardest hit areas. Because this earthquake affects such a large area, there will not be enough pipe and connectors or trained manpower to repair all the breaks quickly. The worst hit areas may not have water in the taps for 6 months.

The pipeline devastation that is disclosed in *The ShakeOut Scenario* is directed at infrastructure that crosses the SAF. *The ShakeOut Scenario* qualifies the potential hazard by stating:

> Based on previous earthquake experience, and anticipating disruption from future earthquakes, water companies store months of water on the near side of the fault and have thought in detail about the types of repairs that will be needed after an earthquake on the San Andreas Fault. Although most lay people tend to worry the most about this part of the water delivery system, this is an area of infrastructure where retrofitting and planning are in place.

Regardless of what level of planning is in place, a large earthquake will inevitably result in damage to water and other infrastructure from an earthquake of this magnitude.

Settlement

Settlement of the ground surface can occur under static (i.e. due to gravity or groundwater removal) but can also be accelerated and accentuated by earthquakes. During an earthquake, settlement can occur from rapid rearrangement, compaction, and settling of subsurface materials (particularly loose, non-compacted, and variable sandy sediments). Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different rates). In addition, areas are susceptible to differential settlement if underlain by compressible sediments, such as poorly engineered artificial fill or poorly graded gravels. Much of the material comprising the floodplain of Mill Creek Wash was deposited during recent geologic history and may be unconsolidated; therefore, some areas within the creek wash could exhibit settlement at varying depths under static conditions when loads are applied or under seismic loading during an earthquake.

Liquefaction

Soil liquefaction is a phenomenon primarily associated with saturated, cohesionless soil layers located close to the ground surface. During liquefaction, soils lose strength and ground failure may occur. Secondary ground failures associated with liquefaction include lateral spreading or flowing of stream banks or fills, sand boils, and subsidence. Soils that are most susceptible to liquefaction are clean, loose, uniformly graded, saturated, fine-grained sand that occur close to the ground surface, usually at depths of less than 50 feet. The San Bernardino County General Plan Geologic Hazard Overlay Map indicates that the proposed connector pipeline project area is located in an area with high liquefaction susceptibility.

Slope Failure Hazards

Ground failure is dependent on the slope and geology as well as the amount of rainfall, excavation, or seismic activities. A slope failure is a mass of rock, soil, and debris displaced down

a slope by sliding, flowing, or falling. Steep slopes and downslope creep of surface materials characterize landslide-susceptible areas. Although the connector pipeline area is adjacent to the San Bernardino Mountains and the Crafton Hills, surface elevations surrounding and including the proposed project site have comparatively low relief. The proposed reservoir enlargement would occur within the steep sloped Crafton Hills; however, the City of Yucaipa Safety Element has not identified the Crafton Hills as a having a moderate or a high landslide risk. The San Bernardino County General Plan Geologic Hazard Overlay Map indicates that the location of the proposed reservoir enlargement area has a low to moderate landslide susceptibility. The low risk of slope instability is due to the presence of bedrock underlying the reservoir area.

Surface Fault Rupture

Seismically-induced ground rupture is defined as the physical displacement of surface deposits in response to an earthquake's seismic waves. The degree of fault rupture can vary among different faults and along different strands of the same fault. Surface rupture can damage or collapse buildings, cause severe damage to roads and pavement structures, and cause failure of aboveground and underground utilities. In large earthquakes, fault rupture is sometimes responsible for unpredictable utility service disruptions. The proposed connector pipeline would extend into an Alquist-Priolo Fault Zone for the San Andreas fault (Figure 3.5-2), but does not cross any strands of the San Andreas fault as mapped by the USGS (Figure 3.5-1) (Jennings, 1994). The presence of the pipeline within the Alquist-Priolo Fault Zone suggests an increased potential for fault rupture to occur but does not necessarily indicate that rupture is certain or imminent.

Seismic Ground Shaking

The project area is subject to seismic ground shaking. Ground shaking intensity varies depending on the overall earthquake magnitude, distance to the fault, focus of earthquake energy, and type of geologic materials underlying an area. The Modified Mercalli Intensity (MMI) scale (**Table 3.5-2**) is commonly used to express earthquake effects due to ground shaking because it expresses ground shaking relative to actual physical effects observed by people during a seismic event. MMI values range from I (earthquake not felt) through a scale of increasing intensities to XII (nearly total damage). Earthquakes on the various active and potentially active fault systems near the proposed project sites can produce a wide range of ground shaking intensities. Geologists and engineers attempt to predict earthquake ground acceleration at sites to improve the structural design of buildings so that the building can withstand the earthquake motion and not collapse. A probabilistic seismic hazard assessment describes seismic hazard from earthquakes that geologists and seismologists agree could occur.[5] The analysis takes into consideration the uncertainties in the

[5] Probabilistic expressed in terms of probability of exceeding a certain ground motion. For example, the 10 percent probability of exceedance in 50 years maps depicts an annual probability of 1 in 475 of being exceeded each year. This level of ground shaking has been used for designing buildings in high seismic areas. The maps for 10 percent probability of exceedance in 50 years show ground motions that geologists and seismologists do not think would be exceeded in the next 50 years. In fact, there is a 90 percent chance that these ground motions would not be exceeded. This probability level allows engineers to design buildings for larger ground motions that geologists and seismologists think would occur during a 50-year interval, which makes buildings safer than if there were only designed for the ground motions that are expected to occur in the next 50 years. Seismic shaking maps are prepared using consensus information on historical earthquakes and faults. These levels of ground shaking are used primarily for formulating building codes and for designing buildings. The maps can also be used for estimating potential economic losses and preparing for emergency response (Peterson et al., 1999).

TABLE 3.5-2
MODIFIED MERCALLI INTENSITY SCALE (ABRIDGED)

Intensity Value	Intensity Description	Average Peak Acceleration(g)[a]
I	Not felt except by very few persons under especially favorable circumstances.	< 0.0017 g
II	Felt only by a few persons at rest, especially on upper floors on buildings. Delicately suspended objects may swing.	< 0.014 g
III	Felt quite noticeably indoors; especially on upper floors of buildings, but many people do not recognize it as an earthquake.	< 0.014 g
IV	During the day felt indoors by many, outdoors by few. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound.	0.014–0.039 g
V	Felt by nearly everyone, many awakened. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned.	0.039–0.092 g
VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; minor fallen plaster or damaged chimneys. Damage slight.	0.092–0.18 g
VII	Everybody runs outdoors. Damage negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken.	0.18–0.34 g
VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, and walls.	0.34–0.65 g
IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse.	0.65–1.24 g
X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from riverbanks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.	> 1.24 g
XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.	> 1.24 g
XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted. Objects are thrown upward into the air.	> 1.24 g

[a] g is gravity = 980 centimeters per second squared. Acceleration is scaled against acceleration due to gravity or the acceleration with which a ball falls if released at rest in a vacuum (1.0 g). Acceleration of 1.0 g is equivalent to a car traveling 100 meters (328 feet) from rest in 4.5 seconds.

SOURCE: Bolt (1988)

size and location of earthquakes and the resulting ground motions that can affect a particular site. The California Geological Survey (CGS) Probabilistic Seismic Hazard Assessment for California determined that a ground acceleration 0.75 g has a 10 percent probability of being exceeded in the project area within 50 years (1 in 475 chance annually) (CGS, 2003). Ground acceleration is measured in "g", where 1 g corresponds to the vertical acceleration force due to gravity.

Groundwater

The proposed connector pipeline alignment corridor lies over the Bunker Hill Groundwater Sub-Basin located in the upper reaches of the Santa Ana River watershed (Upper Santa Ana Water Resources Association, 2007). Groundwater levels in the proposed project area have varied widely over the years due to regional groundwater extraction.

Groundwater levels to the west have risen consistently over the past 70 years due to improved management, groundwater recharge projects, and more recently, the importation of water through the East Branch of the California Aqueduct, which has offset some of the demand for groundwater (DWR, 2006). The depths to groundwater were greater than 200 feet (bgs) in 1945 and 1936. The groundwater table still rises and falls seasonally, however, the magnitude of those fluctuations are not as extreme as they were in the past (DWR, 2006).

The proposed reservoir enlargement area lies over the Yucaipa Groundwater Basin. However, the Crafton Hills are excluded from this groundwater basin, likely due to their sudden rise in elevation and the underlying geology. Groundwater in the reservoir enlargement area is likely held in deep bedrock fractures and shear zones and therefore is not readily available for extraction. The groundwater level in the east rim of the existing Crafton Hills Reservoir varies in depth below the ground surface between 120 and 155 feet.

Mineral Resources

Mineral resources are typically described as metals, industrial minerals (e.g., aggregate, sand, and gravel) oil, gas, and geothermal resources that naturally occur in the land. A California Geologic Survey Report about the mineral land classification of the San Bernardino Valley area describes the proposed project area as a "MRZ-3" mineral resource classification (Shumway, 1995). MRZ-3 land classifications are areas containing known and inferred mineral occurrences of undetermined mineral resource significance. Neither the proposed connector pipeline nor the reservoir enlargement area is located within city or county designated mineral resource areas.

There are 92 existing mines in San Bernardino County, and the California Department of Conservation is currently developing maps to identify known mineral resources for the County (San Bernardino County, 2006).

3.5.3 Impact Assessment

The proposed project's potential impacts were assessed using the *CEQA Guidelines* Appendix G Checklist. The following sections discuss the key issue areas identified in the *CEQA Guidelines* with respect to the proposed project's potential geologic hazard impacts. Significance thresholds are identified and a significance conclusion is made following the discussion.

Surface Rupture

This section discusses the following CEQA Checklist question:

> *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (with reference to the Division of Mines and Geology Special Publication 42)?*

Significance Threshold

The proposed project would result in a significant impact if it were to expose people or buildings to loss, injury, or death resulting from improvements located within an Alquist-Priolo Earthquake Fault Zone without implementing necessary design/engineering elements that would reduce the threat of injury or death.

Impact Analysis

As shown in Figure 3.5-2, the proposed connector pipeline alignment corridor is located within the Alquist-Priolo Earthquake Fault Zone (APEFZ) for the San Andreas Fault, South Branch. Since the proposed connector pipeline is located within an APEFZ, there is an increased potential for fault rupture to occur. Rupture of a water conveyance pipeline could be considered a significant impact due to the risk of flooding, excessive, localized soil erosion and collapse, and loss of water supply.

The Yucaipa Connector Pipeline may remain full of water when not in use to maintain the pipe lining. Valves at either end of the pipeline would be closed when the pipeline is not in use. Rupture could release a part of the pipeline contents. Pipeline damage from surface fault rupture cannot be eliminated entirely but is not considered a significant hazard and the probability of occurrence is low enough to consider this impact less than significant.

The proposed reservoir enlargement area is not located within an APEFZ. The APEFZ for the San Andreas Fault, South Branch is approximately 3,500 feet northeast, and the APEFZ for the Crafton Hills fault is located about 3,000 feet south of the proposed reservoir. No other active or potentially active faults have been identified beneath the current reservoir or the proposed enlargement area. Impacts associated with the proposed reservoir enlargement would be less than significant. No specific mitigation measures are required beyond the design criteria and accepted, standard construction practices used in California, as prescribed by DWR, the DSOD, and where applicable, Title 24.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. Impacts associated with the reservoir enlargement are less than significant as the proposed enlargement area is not located within an APEFZ. The proposed connector pipeline is located partially within an APEFZ but would be used only occasionally during maintenance outages at the reservoir, and thus impacts associated with surface rupture are considered less than significant.

Seismic Ground Shaking

This section discusses the following CEQA Checklist question:

Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Significance Threshold

The proposed project would result in a significant impact if it were to expose people or buildings to loss, injury, or death resulting from development or improvements located on land susceptible to strong seismic ground shaking without taking the necessary design/engineering precautions that would reduce the threat of injury or death.

Impact Analysis

There is a high probability that an earthquake will occur at the proposed project site within the operational life of the reservoir and pipeline; seismic ground shaking is an unavoidable hazard for facilities in the greater Los Angeles Basin. Earthquake ground shaking could damage access roads, engineered slopes, and buried pipelines. The San Andreas and San Jacinto Fault Zones are capable of generating the greatest ground motion due to their proximity to the proposed project area; however, any one of the regional faults could cause noticeable ground shaking. Effects to the pipeline due to excessive ground shaking may include some damage, especially to the appurtenances, but catastrophic failure is not considered likely because of current seismic design and construction practices in California under Title 24, the CBC. Though there may be a temporary service disruption to inspect the pipe after a major seismic event, this would not be considered a significant impact as the proposed pipeline would not routinely convey water.

Ground shaking could cause minor damage at the reservoir site but considering that the earthen dam, spillways, and other facilities are designed to withstand excessive ground motions, the effects of an earthquake are considered less than significant. Prior to construction, the dam location would be evaluated for its geologic suitability. A geotechnical report would be prepared based on data collected from borings and test pits at the dam location. The geotechnical report would include conclusions of the site's suitability for supporting a dam and would include recommendations for site preparation and facility design. The reservoir would be designed and constructed according to rigorous standards imposed by DSOD. Reservoir and dam facilities that are under DSOD jurisdiction are designed, constructed, and inspected under strict standards and

therefore rarely experience damage during an earthquake. In addition to regular inspections, the DSOD performs post-earthquake inspections on dams in the affected region. No specific mitigation measures are required beyond the design criteria and accepted, standard construction practices used in California, as prescribed by DWR, the DSOD, and where applicable, Title 24.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. Current design and construction standards would reduce impacts due to strong seismic ground shaking to a less-than-significant level.

Seismic Ground Failure Including Liquefaction

This section discusses the following CEQA Checklist question:

> *Would the project expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?*

Significance Threshold

The proposed project would result in a significant impact if it were to expose people or buildings to loss, injury, or death resulting from seismic related ground failure such as liquefaction without taking the necessary design/engineering precautions that would reduce the threat of injury or death.

Impact Analysis

The San Bernardino County General Plan Geologic Hazard Overlay Map locates the proposed connector pipeline project area in an area with high liquefaction susceptibility. Secondary soil failures caused by liquefaction would be most prevalent in the saturated unconsolidated alluvium in Mill Creek Wash. Liquefaction could cause the pipeline to settle or rupture if the settlement is excessive. As part of the proposed project, DWR would conduct geotechnical investigations prior to the construction of the project elements. These investigations would identify any potential liquefiable sediment and recommend mitigation to correct the condition which would be incorporated into project specifications. Although liquefiable sediments may exist, they are not considered a significant impact of the project because they would be corrected through standard engineering measures during the final design and construction. Impacts would be less than significant.

According to the San Bernardino County General Plan Geologic Hazard Overlay Map, the proposed reservoir enlargement area is not located on soil or geologic material that is susceptible

to seismic-related ground failure, including liquefaction. As such, there would be no impact relative to liquefaction hazards on the proposed reservoir enlargement area. No specific mitigation measures are required beyond the design criteria and accepted, standard construction practices used in California, as prescribed by DWR, the DSOD, and where applicable, Title 24.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. Effects on the pipeline alignment or reservoir due to seismic-related ground failure would be minor.

Landslides or other Geologically Unstable Area

This section discusses the following CEQA Checklist question:

> *Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?*

Significance Threshold

The proposed project would result in a significant impact if it were to locate project elements on an unstable geologic unit or soil that would potentially be subject to adverse effects caused by landslides, lateral spreading, subsidence, liquefaction or collapse.

Impact Analysis

As described in Section 3.5.3.3 above, the proposed connector pipeline corridor is located within an area that is highly susceptible to liquefaction. Installation of the pipeline would not cause a significant safety risk to individuals, as no habitable structures would be built. In addition, the proposed land uses associated with the proposed project would not attract people onto the project site. The standard engineering design and construction techniques, as prescribed under Title 24 ensure impacts to the proposed project from liquefaction would remain less than significant. The potential for landslides to occur within the connector pipeline corridor is low due to the fact that this area is relatively flat and located within the Mill Creek wash. Additionally, impacts from land subsidence or structural damage would not be significant because there is no action proposed as part of the proposed project that would result in the gradual or incremental lowering of the ground surface. The connector pipeline area would not be subject to a significant risk from landslides or other geologically unstable areas. Impacts would be less than significant.

The proposed reservoir enlargement area is not located within an area that is subject to liquefiable materials. The City of Yucaipa Safety Element has not identified the Crafton Hills as a having a

landslide risk. However, the San Bernardino County General Plan Geologic Hazard Overlay Map indicates that the location of the proposed reservoir enlargement area has a low to moderate landslide susceptibility. While the landslide hazard is low to moderate within the Crafton Hills, the threat still exists due the topography. Major landslides behind the dam could create seiche waves that could result in water overtopping the dam. The proposed reservoir enlargement would be conducted under strict design criteria administered by the DSOD and landslide potential would be considered during design and construction. DWR is currently in the process of conducting geotechnical evaluations prior to project design that would identify potential landslide risks behind the dam that could potentially damage the reservoir and dam. The geotechnical evaluation will provide recommendations to remove potential landslide areas and prepare the reservoir shores to eliminate the risk of foundation failure or a seiche wave. The proposed project does not include habitable structures or a population generating land use that would result in a threat to structures and or people as a result of a landslide. Therefore, impacts would be less than significant. No specific mitigation measures are required beyond the design criteria and accepted, standard construction practices used in California, as prescribed by DWR, the DSOD, and where applicable, Title 24.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. The pipeline alignment area would not be subject to a significant risk from landslides or other geologically unstable areas. The proposed reservoir enlargement would be conducted under strict design criteria that would reduce the risk of landslide.

Soil Erosion and Loss of Topsoil

This section discusses the following CEQA Checklist question:

Would the project result in substantial soil erosion or the loss of topsoil?

Significance Threshold

The proposed project would result in a significant impact if the project's construction phase and or operation phase would result in substantial soil erosion or the loss of topsoil.

Impact Analysis

During construction activities, erosion and top soil loss could occur during rain or high wind events. Excavated soils and exposed earth could erode if prevention measures are not implemented. As required by state law, a SWPPP would be a requirement of project approval. This plan would outline best management practices (BMPs) intended to reduce erosion that could otherwise flow to Mill Creek, Oak Glen Creek, and ultimately the Santa Ana River.

Operation of the proposed project would not result in an increase in soil erosion, as the pipeline would be located below the ground surface. Operation of the proposed reservoir enlargement would include a revegetation plan (Mitigation Measure AES-1) that would stabilize the disturbance area and reduce erosion. Impacts associated with erosion and the loss of top soil loss would be less than significant. No specific mitigation measures are required beyond the design criteria and accepted, standard construction practices used in California, as prescribed by DWR, the DSOD, and where applicable, Title 24.

Mitigation Measures

Implement Mitigation Measure AES-1.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measure AES-1, requiring a revegetation plan, would stabilize the disturbance area and reduce erosion.

Expansive Soil

This section discusses the following CEQA Checklist question:

Would the project be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code (1994), creating a substantial risk to life or property?

Significance Threshold

The proposed project would have a significant impact if any of the proposed elements were located on expansive soils that could pose a threat to life or property and no design/engineering mitigation options were implemented.

Impact Analysis

Soils with shrink-swell or expansive properties typically occur in fine-grained clay sediments and cause damage through volume changes as a result of a wetting and drying process. Structural damage may occur over a long period of time, usually the result of inadequate soil and foundation engineering or the placement of structures directly on expansive soils. All the project components would be designed and constructed in accordance with Title 24, which, through appropriate investigation and soil testing, would reduce the risk of expansive soils, by standard engineering practices such as soil replacement or conditioning. The United Stated Department of Agriculture Soil Survey of San Bernardino County Southwestern Part, California (1980) describes the soils at the pipeline and reservoir site as having “low” shrink-swell potential. The proposed project sites are not located on expansive soil types as defined in Table 18-1-B of the Uniform Building Code. Impacts would be less than significant. No specific mitigation measures are required beyond the design criteria and accepted, standard construction practices used in California, as prescribed by DWR, the DSOD, and where applicable, Title 24.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed project components are not located on expansive soil types as defined in Table 18-1-B of the Uniform Building Code.

Soil Suitability for Septic System

This section discusses the following CEQA Checklist question:

> *Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?*

Significance Threshold

The proposed project would have a significant impact if a septic system or alternative wastewater disposal system was installed where soils could not adequately support such a system. In general, soils considered suitable for septic systems have permeabilities that are commensurate with the designed wastewater flows.

Impact Analysis

The proposed project would not include installation of a septic system or an alternative wastewater disposal system. There would be no impact.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed project would not include installation of a septic system or alternative wastewater disposal system.

Mineral Resources

This section discusses the following CEQA Checklist question:

> *Would the project result in the loss of availability of a known mineral resource that would be of local value or of value to the region and the residents of the state?*

Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

Significance Threshold

The proposed project would result in a significant impact if it were to prevent future accessibility to any known mineral resources considered of value to the local region or the state and or as mapped by a local planning document.

Impact Analysis

Mineral resources are typically described as metals, industrial minerals (e.g., aggregate, sand, and gravel) oil, gas, and geothermal resources that naturally occur in the land. A California Geologic Survey Report about the mineral land classification of the San Bernardino Valley area describes the proposed project area as a "MRZ-3" mineral resource classification (Shumway, 1995). MRZ-3 land classifications are areas containing known and inferred mineral occurrences of undetermined mineral resource significance. However, neither the proposed connector pipeline nor the reservoir enlargement area is located within city or county designated mineral resource areas. Moreover, enlargement of the reservoir within the Crafton Hills Conservancy land and construction of the connector pipeline adjacent to SR-38 would not result in the loss of resource availability or value to the region and the residents of the state. The proposed project would have a less than significant impact on mineral resources.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. The proposed project is not located within designated mineral resource areas nor would it result in the loss of resource availability or value to the region.

3.5.4 Mitigation Measure Summary Table

Table 3.5-3 presents the impacts and mitigation summary for Geology, Soils, Seismicity and Mineral Resources.

TABLE 3.5-3
GEOLOGY, SOILS, SEISMICITY, AND MINERAL RESOURCES
IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance after Mitigation
Surface Rupture: The proposed project would not be located in areas susceptible to surface rupture.	None required	Less than significant
Seismic Ground Shaking: Strong seismic ground shaking would subject the proposed project to a less than significant impact.	None required	Less than significant
Seismic Ground Failure including Liquefaction: Seismic ground failure including liquefaction would subject the proposed project to a less than significant impact.	None required	Less than significant
Landslides or other Geologically Unstable Area: Landslides and the presence of other geologically unstable areas would subject the proposed project to a less than significant impact.	None required	Less than significant
Soil Erosion and Loss of Topsoil: The proposed project would result in a less than significant impact on soil erosion with incorporation of the mitigation measure.	AES-1	Less than significant
Expansive Soil: The proposed project components are not located on expansive soil types as defined in Table 18-1-B of the Uniform Building Code.	None required	No impact
Soil Suitability for Septic System: The proposed project would not require a septic system.	None required	No impact
Mineral Resources: The proposed project would have a less than significant impact related to mineral resource availability and local mineral resource value.	None required	Less than significant

SOURCE: ESA, 2008

3.6 Hazards and Hazardous Materials

This chapter presents an evaluation of the potential for hazards and hazardous material impacts related to construction and operation of the proposed project. The proposed project, as analyzed in this chapter, includes the proposed connector pipeline and the reservoir enlargement areas.

Section 25501(o) of the California Health and Safety Code defines "hazardous material" as any material that, because of its quantity, concentration, or physical or chemical characteristics, would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

3.6.1 Regulatory Framework

Federal

Occupational Safety and Health Administration

The federal Occupational Safety and Health Administration (OSHA) enforces regulations covering the handling of hazardous materials. The regulations established in the Code of Federal Regulations (CFR) Title 29 are designed to protect workers from encountering hazardous materials at the work site. The regulations require certain training, operating procedures, and protective equipment to be used at work sites where hazardous materials might be encountered.

Resource Conservation and Recovery Act

Under the federal Resource Conservation and Recovery Act (RCRA), individual states may implement their own hazardous waste programs in lieu of RCRA as long as the state program is at least as stringent as federal RCRA requirements and is approved by the USEPA. The USEPA approved California's RCRA program, as defined by the Hazardous Waste Control Law (HWCL), in 1992. The California Environmental Protection Agency (Cal EPA) and the Department of Toxic Substance Control (DTSC), a department within Cal EPA, regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. DTSC has primary hazardous materials regulatory responsibility, but can delegate enforcement responsibilities to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the HWCL.

Toxic Substance Control Act

The Toxic Substances Control Act (TSCA) of 1976 was enacted by Congress to give the USEPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. The USEPA repeatedly screens these chemicals and can require reporting or testing of those that may pose an environmental or human-health hazard. The USEPA can ban the manufacture and import of those chemicals that pose an unreasonable risk.

CERCLA

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 was developed to protect the water, air, and land resources from the risk created by past chemical disposal practices. This act is also referred to as the Superfund Act, and the sites listed under it are referred to as Superfund sites. Under CERCLA, the EPA maintains a list, the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), of all contaminated sites in the nation that have in part or are currently undergoing clean-up activities. CERCLIS contains information on current hazardous waste sites, potential hazardous waste sites, and remedial activities. This includes sites that are on the National Priorities List (NPL) or being considered for the NPL.

State

California Code of Regulations

The California Code of Regulations (CCR), Title 22, Section 66261.20-24 contains technical descriptions of characteristics that would classify a soil as a hazardous waste. When excavated soils have concentrations of contaminants higher than certain acceptable levels, the soil must be handled and disposed as hazardous waste.

Department of Toxic Substance Control

The DTSC maintains a Hazardous Waste and Substances Site List for site cleanup. This list is commonly referred to as the Cortese List. The List is a planning document used by the State, local agencies and developers to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Government Code section 65962.5 requires the Cal EPA to develop at least annually an updated Cortese List. DTSC is responsible for a portion of the information contained in the Cortese List. Other state and local government agencies are required to provide additional hazardous material release information for the Cortese List.

DTSC's Site Mitigation and Brownfields Reuse Program EnviroStor database provides DTSC's component of Cortese List data by identifying an Annual Work Plan (now referred to as State Response Plan and/or Federal Superfund Plan), and Backlog sites listed under Health and Safety Code section 25356. In addition, DTSC's Cortese List includes Certified with Operation and Maintenance sites.

State Water Resources Control Board

The State Water Resources Control Board (SWRCB) and the RWQCBs administer the requirements of the Clean Water Act that regulate pollutant discharges into waterways of the United States. The Santa Ana Regional Water Quality Control Board (SARWQCB) enforces site cleanup regulations for illicit discharges that have resulted in contamination of groundwater in the proposed project area.

California Hazardous Materials Release Response Plans and Inventory Law

The California Hazardous Materials Release Response Plan and Inventory Law of 1985 (Business Plan Act) requires that businesses that store hazardous materials on-site prepare a business plan and submit it to local health and fire departments. The business plan must include: details of the facility and business conducted at the site; an inventory of hazardous materials that are handled and stored on-site; an emergency response plan; and a safety and emergency response training program for new employees with an annual refresher course.

California Occupational Safety and Health Administration

In California, the California Occupational Safety and Health Administration (Cal OSHA) regulates worker safety similarly to the federal OSHA. OSHA has developed worker safety regulations for the safe abatement of lead-based paint and primers (Lead in Construction Standard, Title 8 CCR 1532.1).

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

In January 1996, Cal EPA adopted regulations, which implemented a Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The program has six elements: (1) hazardous waste generators and hazardous waste on-site treatment; (2) Underground storage tanks (USTs); (3) Above-ground storage tanks (ASTs); (4) hazardous materials release response plans and inventories; (5) risk management and prevention programs; and (6) Unified Fire Code hazardous materials management plans and inventories. The Unified Program is implemented at the local level, and the agency responsible for implementation of the Unified Program is called the Certified Unified Program Agency (CUPA). In San Bernardino County, the San Bernardino County Fire Department – Hazardous Materials Division is the designated CUPA.

Local

Cities of Yucaipa and Redlands

The City of Yucaipa has an adopted Hazardous Waste Management Plan that contains specific standards for the processing, treatment, handling, and disposal of hazardous materials. The proposed reservoir enlargement area is not located within a hazardous waste site identified by the City of Yucaipa. The City of Redlands cooperated under a Memorandum of Understanding with the County of San Bernardino to administer a Countywide Household Hazardous Waste management program and a City-operated permanent collection center. Both cities have General Plan goals and policies to reduce hazardous waste in their respective communities for the benefit of environmental health. The proposed connector pipeline is not located in a city/county designated hazardous material site.

San Bernardino County

AB 2948 (Chapter 1504, Statutes of 1986), commonly known as the Tanner Bill, authorized counties to prepare Hazardous Waste Management Plans (HWMPs) in response to the need for safe management of hazardous wastes. On March 31, 1987, the County of San Bernardino Board of Supervisors authorized the preparation of the County's HWMP. The preparation of the HWMP included extensive public participation. Consistent with state law, an advisory committee was established to advise County staff and local government officials on issues pertaining to management of hazardous wastes.

The HWMP was adopted by the County of San Bernardino Board of Supervisors and approved by the California Department of Health Services in February 1990. The HWMP serves as the primary planning document for the management of hazardous waste in San Bernardino County. The HWMP identifies the types and amounts of wastes generated in the County, establishes programs for managing these wastes, identifies an application review process for the siting of specified hazardous waste facilities, identifies mechanisms for reducing the amount of waste generated in the County, and identifies goals, policies, and actions for achieving effective hazardous waste management.

The San Bernardino County Fire Department – Hazardous Materials Division is the local agency responsible for the enforcement of a variety of hazardous materials management requirements. They are the state designated CUPA for the County of San Bernardino (excluding the City of Victorville). The purpose of the CUPA program is to provide a comprehensive approach to reduce the overlapping and sometimes conflicting requirements of different governmental agencies. The CUPA provides consolidation and consistency in reporting requirements, permit formats, inspection criteria, enforcement standards, and fees for various hazardous materials programs. The CUPA is required by state law to maintain a list of facilities within the County that are known to use, store, and/or generate hazardous materials/wastes. Facilities that handle hazardous materials or generate hazardous waste must obtain a permit from the CUPA. The San Bernardino County Fire Department manages six hazardous material and hazardous waste programs:

- Hazardous Materials Release Response Plans and Inventory (Business Plan).
- California Accidental Release Program.
- USTs.
- Aboveground Petroleum Storage Spill Prevention Control and Countermeasure (SPCC).
- Hazardous Waste Generation and On-site Treatment.
- Hazardous Materials Management Plans and Inventory Statements under Uniform Fire Code Article 80.

3.6.2 Setting

Regional Setting

The proposed connector pipeline, after first crossing under Mill Creek Road (SR-38), generally runs parallel to the north side of Mill Creek Road until it ultimately intersects with Bryant Street. The undeveloped land in this specific area is located within the floodplain and 100-year flood hazard area of Mill Creek. The pipeline corridor presently consists of disturbed mature Riverside alluvial fan sage scrub. (See Chapter 3.3, Biological Resources for additional information about vegetation cover at the proposed project site.)

The project site is located within the Santa Ana River watershed. The proposed reservoir enlargement area is located at the eastern end of the Crafton Hills within the City of Yucaipa. The canyon proposed for inundation is located adjacent to and on the southwest side of the existing Crafton Hill Reservoir in an unnamed drainage channel predominantly covered with chamise chaparral (see Chapter 3.3, Biological Resources). The drainage is upstream of the Yucaipa Regional Park Reservoirs, which have a hydrologic connection to the Santa Ana River, although the reservoir impoundments rarely release water downstream. (See Chapter 3.7, Hydrology and Water Quality for additional information.)

Project Area Setting

Hazardous Waste Sites

In San Bernardino County, as of January 1, 2006, there are 55 potential hazardous waste sites that are listed under the CERCLA, also known as Superfund. Within this program, there is a NPL, made up of four hazardous waste sites that have been assigned the highest cleanup priority. These four NPL sites are:

- Marine Corps Logistics Base in Barstow;
- George Air Force Base in Victorville;
- Newmark Groundwater Contamination in San Bernardino; and
- Norton Air Force Base in San Bernardino.

There are no non-NPL sites near the proposed project site

Based on information provided by the San Bernardino County Fire Department, Hazardous Materials Division, as the CUPA for the County they hold approximately 6,500 permits with businesses throughout the County for various hazardous materials and hazardous waste activities. This number is a general figure based on known permit holders and can vary as businesses modify their activities. The proposed connector pipeline and reservoir enlargement areas are not located near any of the County-designated hazardous materials sites.

Naturally-Occurring Asbestos

Asbestos is naturally occurring in the environment and is associated with the presence of ultramafic rocks. Ultramafic rocks are dunite, peridotite, pyroxenite, and hornblendite

(Department of Conservation, 2000). The proposed reservoir enlargement area would be located primarily on crystalline bedrock composed of diorite, gneiss, metadiorite, quartzite, schist, and marble (DWR, 1999), none of which are associated with naturally-occurring asbestos. In addition, the California Department of Conservation, Division of Mines and Geology has determined that there are no known occurrences of ultramafic rocks in San Bernardino County (Department of Conservation, 2000). There would be no hazards associated with naturally-occurring asbestos in the project area.

Groundwater

The proposed connector pipeline project corridor overlies the Bunker Hill sub-basin of the Upper Santa Ana Valley Groundwater Basin. The basin is referred to as the San Bernardino Basin Area (SBBA). Total dissolved solids (TDS) concentrations in public supply wells in the SBBA range from 150 to 550 mg/L, with an average of 324 mg/L (DWR, 2003).

According to DWR's Bulletin 118-Update 2003, the SBBA is affected by five major groundwater contaminant plumes of volatile organic compounds (VOCs) that include the following:

- the Crafton-Redlands plume, with trichloroethylene (TCE) and lower levels of perchloroethylene (PCE) and dibromochloropropane (DBCP);
- the Norton Air Force Base TCE and PCE plume;
- the Muscoy plume near the Shandon Hills, which is a Superfund site with TCE and PCE;
- the Newmark plume near the Shandon Hills, which is a Superfund site with TCE and PCE; and
- the Santa Fe plume with PCE, TCE, and 1,2 dichloroethylene (1,2-DCE) contamination.

The proposed connector pipeline project area is located at the southeastern end of the Bunker Hill groundwater basin. The nearest contaminate plume is the Crafton-Redlands plume. The east edge of the plume, nearest the proposed project site, is over five miles to the west of the connector pipeline project site. The contaminate plume has been migrating to the west with the movement of groundwater, away from the proposed project site.

The SARWQCB issued Investigation Order 94-11 and Cleanup and Abatement Orders No. 94-37 and 97-58, as amended by 01-56, which required the Lockheed Martin Corporation (Lockheed) to prepare contingency plans to address impacts of the plume on water supply wells. Lockheed has installed treatment systems at the leading edge of the contaminate plume that are moved to keep up with the migrating plume. Lockheed submits monitoring reports to the SARWQCB summarizing data compiled by the remediation system. According to RWQCB,[1] the groundwater plume has migrated up to eleven miles from the contaminate source, in a western direction. Mr. Saremi stated that groundwater recharge basins situated near the contaminate site may have flushed most of the contaminants from soil. The proposed connector pipeline and reservoir enlargement area are not located near or directly over any contaminated groundwater plumes.

[1] Personal communication with Mr. Kamron Saremi, RWQCB Project Manager for 1500 Crafton Ave site. January 2, 2008

Additionally, the excavation required for the connector pipeline is not expected to encounter groundwater due to the depth of the groundwater.

3.6.3 Impact Assessment

The proposed project's potential impacts were assessed using the significance criteria identified in Environmental Checklist in Appendix G of the *CEQA Guidelines*. The following section discuss key issue areas identified in the *CEQA Guidelines* with respect to the proposed project's potential effect to humans and the environment through the use of hazardous materials during project construction and operation. Significance thresholds are identified and a significance conclusion is made following the discussion.

Hazardous Material Use

This section discusses the following CEQA Checklist questions:

> *Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*
>
> *Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident involving the release of hazardous materials into the environment?*

Significance Threshold

The proposed project would have a significant impact if the project would expose people or the environment to hazardous materials during construction or operation of the facilities.

Impact Analysis

Operation of the proposed project would not expose people or the environment to hazardous materials. However, project construction activities would require the transport, use, and disposal of hazardous materials such as fuels, oils, solvents, and glues. Exposure or inadvertent release of these materials into the environment could expose construction workers, the public, and/or the environment to potentially hazardous conditions, or adversely impact soil, surface waters, or groundwater quality. Therefore, a hazardous materials construction site plan shall be prepared before project construction begins and shall include specifications for BMPs that would be implemented during construction. The BMPs would be measures undertaken to control the release of hazardous materials into the environment during construction activities. Mitigation Measure HA-1 identified specific BMPs to be included in the hazardous materials construction site plan. With implementation of Mitigation Measure HA-1, potential impacts associated with use and potential inadvertent releases of hazardous materials during construction activities would be less than significant.

Mitigation Measures

HA-1: DWR shall require the construction contractor to develop and implement a hazardous materials construction site plan that includes BMPs that would prevent the accidental release of hazardous materials. The plan shall include, but not be limited to, the following BMPs:

- Follow manufacturers' recommendations and regulatory requirements for use, storage, and disposal of chemical products and hazardous materials used in construction;
- During routine maintenance of construction equipment, properly contain and remove grease and oils; and
- Properly dispose of discarded containers of fuels and other chemicals.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measure HA-1 would require the hazardous materials construction site plan to include BMPs that would minimize the potential release of hazardous materials.

Hazardous Materials Use Near Schools

This section discusses the following CEQA Checklist question:

Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Significance Threshold

A significant impact would result if the proposed project emitted or handled hazardous materials within one-quarter mile of a school

Impact Analysis

The nearest school to the proposed project site is the Park View Middle School, located at 34875 Tahoe Drive, approximately three-quarters of a mile from the project site. As discussed above, construction of the reservoir and pipeline would require the use of fuels, oils, and lubricants which are hazardous materials. Implementation of the SWPPP would require the construction contractor to implement BMPs for the use, storage, and disposal of these materials. The long-term operation of the reservoir and pipeline would not result in any hazardous emissions or require handling of acutely hazardous materials or substances. Due to the distance between the proposed project and the nearest school and the required SWPPP, there would be no impact.

Mitigation Measures

None required.

Significance Conclusion

No impact. The closest school is approximately three-quarters of a mile from the proposed project components.

Hazardous Material Sites

This section discusses the following CEQA Checklist question:

Would the project be located on a site which is included on a list of hazardous materials sites complied pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Significance Threshold

The proposed project would have a significant impact if construction of the project would occur on a site which has been listed on a hazardous material site pursuant to Government Code Section 65962.5 and approved remediation measures were not implemented to clean up the site.

Impact Analysis

The proposed connector pipeline and reservoir enlargement area are not on the Cortese List and thus are located on sites absent of hazardous material, pursuant to Government Code Section 65962.5 (Cal EPA, 2008). As such, the proposed project would not pose a significant hazard to the public or the environment. There would be no impact.

Mitigation Measures

None required**.**

Significance Conclusion

No impact. The proposed project components would be located on sites absent of hazardous material and therefore, would not pose a significant hazard to the public or the environment.

Airport Hazards

This section discusses the following CEQA Checklist questions:

For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Significance Threshold

The proposed project would have a significant impact if it was located within an airport land use plan or within two miles of an airport where no plan has been adopted and the project resulted in safety hazards for people residing or working in the area.

Impact Analysis

The nearest airport to the proposed project site is the Redlands Municipal Airport. The Redlands Municipal Airport is located approximately five miles to the west of the project site. The airport does have an established Airport Land Use Plan, but the proposed project is not located within the airport influence area or any other airport safety zones. The San Bernardino International Airport is also located near the project site, approximately 10 miles away. The proposed project is not located near any of the San Bernardino Airport Land Use Plan safety zones. There are no private airstrips near the project site. The proposed project would have no impacts related to airport hazards.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed project is not located near any of the San Bernardino Airport Land Use Plan safety zones and there no private airstrips near the project site.

Emergency Response Plan

This section discusses the following CEQA Checklist question:

Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Significance Threshold

The proposed project would have a significant impact if implementation of the project physically interfered with an adopted emergency response plan or evacuation route defined by a local jurisdiction.

Impact Analysis

Implementation of the proposed reservoir would not be located within a City or County defined emergency response plan or emergency evacuation route. The reservoir construction and operation would have no impact on emergency response plans.

The proposed connector pipeline would cross SR-38, a San Bernardino County defined emergency evacuation route. The operation of the pipeline would have no impact on the designated evacuation route because the pipe would be underground. However, construction of the proposed connector pipeline would require a detour and temporary lane closures on SR-38, which could constrict traffic flow along this evacuation route. The detour and temporary lane closures would only be required for a short period of time during construction of the connector pipeline across SR-38. As described in Chapter 3.10, Transportation and Traffic DWR would require the construction contractor to implement a Traffic Control Plan (Mitigation Measure TR-1) to reduce traffic congestion during construction activities. Implementation of this plan would also reduce the interference of project construction with the evacuation route. Mitigation Measure TR-1 requires the Traffic Control Plan to be submitted to local emergency service providers to inform them of lane/road closures and detours and to maintain emergency access during construction. Mitigation Measure TR-5 requires coordination of emergency access plans with the fire department and other law enforcement agencies during construction.

In the previous 1994 WIP EIR and 1998 EBX SEIR, Mitigation Measures RU-4 and RU-5 required the preparation of a seismic Emergency Response Plan (ERP) and hazardous materials Emergency Response Plan for construction and operation of the proposed project. Both response plans were required to be approved by appropriate agencies. Mitigation Measure HA-2 requires these ERPs to be revised to include the proposed project and to be approved by the appropriate agencies. The proposed project would have a less than significant impact on emergency response plans with the implementation of the Traffic Control Plan (Mitigation Measure TR-1), the coordination of emergency access plans as required by Mitigation Measure TR-5, and the revised Emergency Response Plans required by Mitigation Measure HA-2.

Mitigation Measures

HA-2: DWR shall update the Emergency Response Plans for the East Branch Extension – Phase I to include the proposed project facilities.

Implement TR-1 and TR-5 (See Chapter 3.10).

Significance Conclusion

Less than significant with mitigation. Implementation of the above mitigation measures, requiring a Traffic Control Plan, coordination of emergency access plans, and revision of the Emergency Response Plan, would reduce impacts to a less-than-significant level.

Grassland and Wildland Fires

This section discusses the following CEQA Checklist question:

> *Would the proposed project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?*

Significance Threshold

The proposed project would have a significant impact if construction and or operation of the project would expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

Impact Analysis

Construction of the proposed project could expose people or structures to the hazards of wildland fires. The rural lands surrounding the project area consist of flammable vegetation which is highly susceptible to wildland fires. Construction activities such as welding and heavy equipment use could generate sparks, and high temperature engines and mufflers that could contact vegetation could start a wildfire. While fires tend to readily climb vegetated hills, there are residences down hill from the proposed reservoir construction area that could be threatened by a wildfire in the Crafton Hills. While the area around the proposed connector pipeline corridor is generally undeveloped, residences are located to the west along Mill Creek Road and a housing development is currently being constructed on the south side of Mill Creek Road, all of which could be threatened by a wildfire. Implementation of Mitigation Measure HA-3 would reduce potential impacts to people and structures due to wildfires to a less than significant level by requiring implementation of best management practices during construction to minimize the potential for fires to start or to spread.

> **HA-3:** DWR shall require the construction contractor to implement the following best management practices during construction to prevent wildland fires.
>
> - During construction, all staging areas, welding areas, or areas slated for development using spark-producing equipment shall be cleared of dried vegetation or other flammable material.
> - Any construction equipment that includes a spark arrestor shall be equipped with a spark arrestor in good working order.
> - All vehicles and crews working at the project site shall have access to functional fire extinguishers at all times.
> - Construction crews shall have a spotter during welding activities to look out for potentially dangerous situations, including accidental sparks.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measure HA-3 would reduce potential impacts to people and structures due to wildfires to a less than significant level by requiring implementation of best management practices during construction to minimize the potential for fires to start or to spread.

3.6.4 Mitigation Measure Summary Table

Table 3.6-1 presents the impacts and mitigation summary for Hazards and Hazardous Materials.

TABLE 3.6-1
HAZARDS AND HAZARDOUS MATERIALS IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance after Mitigation
Hazardous Material Use: The proposed project would not expose people or the environmental to hazardous materials with incorporation of the mitigation measure.	HA-1	Less than significant
Hazardous Material Use Near Schools: The use of hazardous materials during construction of the proposed project would not impact schools. The closest school is approximately three-quarters of a mile from the project site.	None required	No impact
Hazardous Material Sites: The proposed project is not located on any hazardous material sites, pursuant to the Government Code Section 65962.5.	None required	No impact
Airport Hazards: The proposed project is not located near any of the San Bernardino Airport Land Use Plan safety zones, and there are no private airstrips near the project site.	None required	No impact
Emergency Response Plan: The proposed project would not conflict with the implementation of an emergency response plan or interfere with an evacuation route with incorporation of mitigation measures.	HA-2, TR-1 and TR-5	Less than significant
Grassland and Wildland Fires: The proposed project would have a less-than-significant impact related to grassland or wildland fire hazards with incorporation of the mitigation measure.	HA-3	Less than significant

SOURCE: ESA, 2008

3.7 Hydrology and Water Quality

This chapter describes local surface water and groundwater resources and describes regional water quality issues. The chapter also evaluates the proposed project's potential impacts on water resources in the project area.

3.7.1 Regulatory Framework

Federal

Clean Water Act

The USEPA is the federal agency responsible for implementing the CWA. The purpose of the CWA is to protect and maintain the quality and integrity of the nation's waters by requiring states to develop and implement state water plans and policies.

CWA Section 303

Section 303 of the CWA requires states to establish water quality standards consisting of designated beneficial uses of water bodies and water quality standards to protect those uses for all waters of the United States. Under Section 303(d) of the CWA, states, territories and authorized tribes are required to identify impaired waters within their jurisdiction, establish a prioritized ranking for all impaired waters, and develop action plans to improve the water quality of each impaired water. Impaired waters are the waters that do not meet water quality standards, even after generators of point-sources of pollution have installed the required pollution control technology. Plans to improve water quality includes the development of Total Maximum Daily Loads (TMDL) that set limits for non-point source pollutants. The recently passed Ducheny Bill (AB 1740, Chapter 52, Statutes of 2000) requires the SWRCB and its nine RWQCBs to post this list and to provide an estimated completion date for each TMDL. The list is administered by the Regional Boards, in this case, the SARWQCB.

CWA Section 402

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES), in which discharges into navigable waters are prohibited except in compliance with specified requirements and authorizations. Under this system, applicable entities, including municipal and industrial facilities, are required to obtain a NPDES permit that specifies allowable limits, based on available wastewater treatment technologies, for pollutant levels in their effluent. In California, the USEPA has delegated the implementation of this program to the SWRCB and to the RWQCBs. The SARWQCB is responsible for the NPDES permit program in the project area.

Storm water discharges are regulated somewhat differently. Storm water runoff from construction areas of one acre or more require either an individual permit or coverage under the statewide General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, 99-08-DWQ). In addition, specific industries that have direct storm

water discharges to navigable waters are required to obtain either an individual permit issued by the RWQCB, or obtain coverage under the statewide General Industrial Storm Water Permit for storm water discharges.

A non-point source is a diffused source, such as land runoff, precipitation, deposit from the atmosphere, or percolation. Major non-point sources of water pollution are agriculture, mining, oil and gas extraction, pastureland and feedlots, land disposal, and urban runoff. For non-point sources, each RWQCB prepares a Basin Plan (described further below) that includes an outline of the regional approach to controlling non-point source pollution in its Urban Runoff Management scheme. Part of the strategy involves the permitting of storm water discharges from all facilities associated with industrial activities and from all construction activities that result in the disturbance of land totaling one acre or more.

CWA Section 404 and 401

Section 404 of the CWA established a program to regulate the discharge of dredged or fill material into waters of the U.S., including wetlands. Activities in waters of the U.S. regulated under this program include the placement of fill for development, water resource, infrastructure, and mining projects. Section 404 requires a permit from the Corps before dredged or fill material may be discharged into waters of the U.S., unless the activity is exempt from Section 404 regulation.

Section 401 of the CWA provided the authority for the state-operated Water Quality Certification Programs. Section 401 of the CWA requires an applicant for any federal permit (e.g., a Section 404 permit for disposal of dredged or fill material) that proposes an activity which may result in a discharge to waters of the U.S. to obtain certification from the state that the discharge will comply with other provisions of the CWA. In California, certification is provided by the applicable RWQCB. Any local or jurisdictional water quality programs must also be addressed when constructing in areas that influence the quality of surface and groundwater.

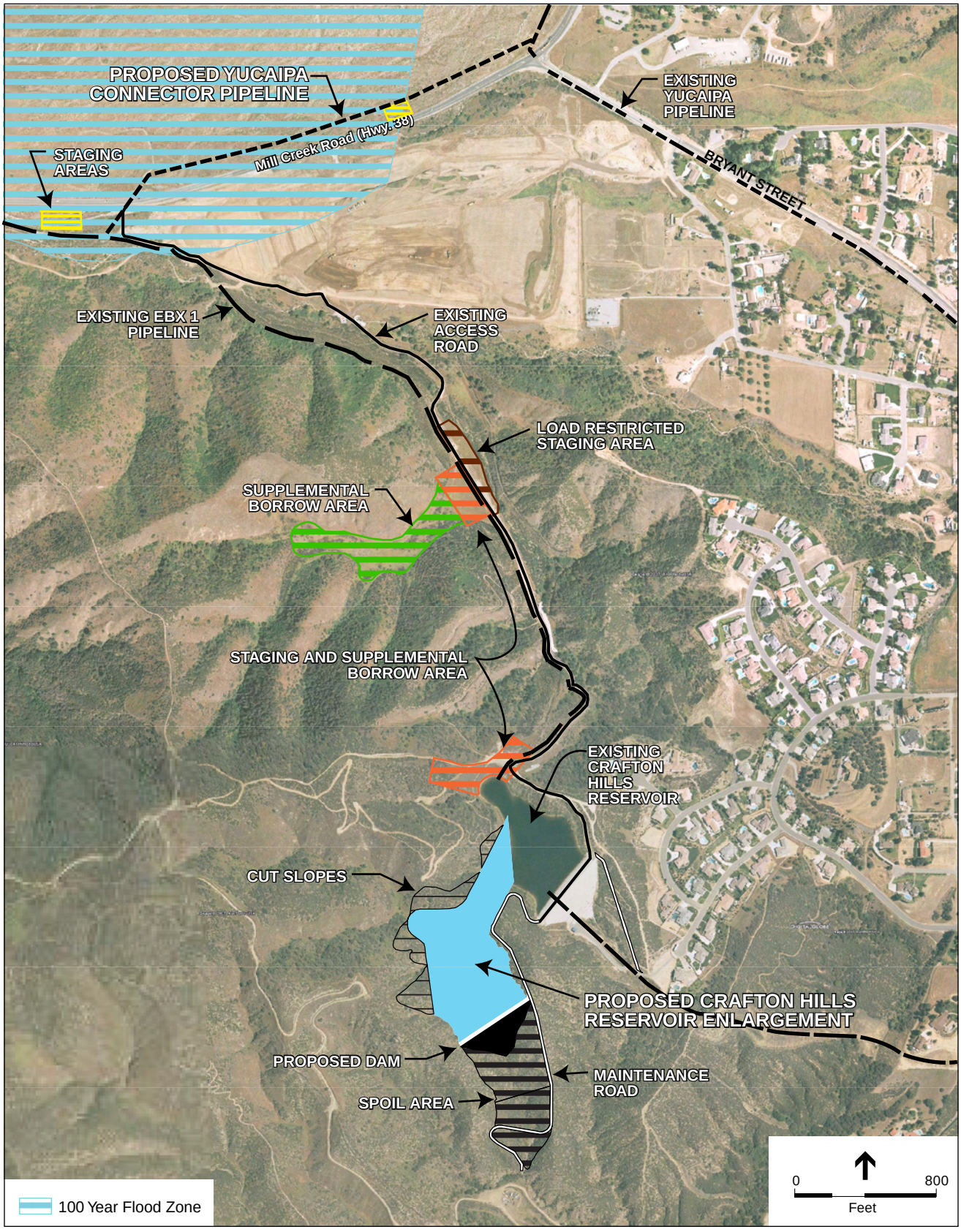
Federal Emergency Management Agency (FEMA)

Under Executive Order 11988, the Federal Emergency Management Agency (FEMA) is responsible for the management and mapping of areas subject to flooding during a 100-year flood event (i.e., one percent chance of occurring in a given year). FEMA requires that local governments covered by federal flood insurance pass and enforce a floodplain management ordinance that specifies minimum requirements for any construction within the 100-year floodplain. The western portion of the proposed connector pipeline falls within the Mill Creek 100-year floodplain, as delineated by FEMA (**Figure 3.7-1**).

State

State Water Resources Control Board

The SWRCB, located in Sacramento, is the agency with jurisdiction over water quality and water rights issues in the State of California. The SWRCB is governed by the Porter-Cologne Water Quality Act (Division 7 of the California Water Code), which establishes the legal framework for water quality control activities by the SWRCB. Much of the implementation of the SWRCB's



SOURCE: FEMA, 2007; GlobeXplorer, 2007; DWR, 2007.

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Figure 3.7-1

FEMA Flood Hazard Map

responsibilities is delegated to its nine Regional Boards. The proposed project site is located within the Santa Ana Region.

Regional Water Quality Control Board, Santa Ana Region

The SARWQCB is responsible for the protection of beneficial uses of water resources in the project vicinity. The SARWQCB uses planning, permitting, and enforcement authorities to meet this responsibility. The SARWQCB has prepared and adopted the Santa Ana River Basin Water Quality Control Plan (Basin Plan) (1995), which establishes beneficial uses to be protected, water quality objectives needed to protect designated beneficial uses, and implementation programs to meet the stated objectives. The Basin Plan comprehensive program requirements are designed to be consistent with federal regulations (40 CFR Parts 122-124) and are implemented through issuance of NPDES permits to point source and non point sources of pollutant discharges including construction activities. The applicable beneficial uses of the nearest downstream water body to the proposed project area is provided in **Table 3.7-1**. **Table 3.7-2** defines the identified beneficial uses.

TABLE 3.7-1
BENEFICIAL USE DESIGNATIONS FOR WATER BODIES IN THE PROJECT AREA

Water Body	MUN	AGR	GWR	COLD	RARE	WARM	WILD	REC-1	REC-2
Santa Ana River Reach 4 (Mission Blvd. in Riverside to San Jacinto Fault in San Bernardino)	*		X		X		X	X[a]	X
Santa Ana River Reach 5 (San Jacinto Fault in San Bernardino to Seven Oaks Dam[b])	X	X	X		X	X	X	X	X
Mill Creek Reach 1 (segment between the confluence with the Santa Ana River to the Bridge Crossing on Route 38 at Upper Powerhouse)	I	I	I	I	I		I	I	I
San Timoteo Creek Reach 2 (Gage at San Timoteo Canyon Road to Confluence with Yucaipa Creek)	*		X			X	X	X	X
Oak Glen Creek	X	X				X	X	X	X
Yucaipa Creek	I		I			I	I	I	I

[a] Access prohibited in some portions by San Bernardino County Flood Control
[b] Reach 5 uses are intermittent upstream of Waterman Avenue

X = Present or potential beneficial uses
I = Intermediate beneficial uses
* = Excepted from MUN

SOURCE: SARWQCB Basin Plan, 1995

NPDES General Construction Permit

The USEPA has delegated authority for implementing the NPDES program to individual states, and the SWRCB and RWQCB assume this authority in California. Only non-point (e.g., storm

TABLE 3.7-2
DEFINITIONS OF BENEFICIAL USES OF SURFACE WATERS

Beneficial Use	Description
Agricultural Supply (AGR)	Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
Municipal and Domestic Supply (MUN)	Waters are used for community, military, municipal or individual water supply systems. These uses may include, but are not limited to, drinking water supply.
Groundwater Recharge (GWR)	Uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting saltwater intrusion into freshwater aquifers.
Cold Freshwater Habitat (COLD)	Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Preservation of Rare and Endangered Species (RARE)	Uses of waters that support habitats necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered.
Warm Freshwater Habitat (WARM)	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Wildlife Habitat (WILD)	Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
Water Contact Recreation (REC 1)	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white-water activities, fishing, or use of natural hot springs.
Non-Contact Water Recreation (REC 2)	Uses of water for recreational activities involving proximity to water, but not normally involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tidepool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

SOURCE: SARWQCB Basin Plan, 1995

water) source discharges would be associated with the proposed project; no point-source discharges are anticipated.

Construction activities of one acre or more are regulated by the SWRCB and are subject to the permitting requirements of the NPDES General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit, Order No. 99-08-DWQ). The project applicant must submit a Notice of Intent to the RWQCB to be covered by the Construction General Permit prior to the beginning of construction. The Construction General Permit requires the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP must be prepared before project construction begins and must include specifications for Best Management Practices (BMPs) that would be implemented during construction. BMPs are measures undertaken to control degradation of surface water by preventing soil erosion or the discharge of pollutants from the construction area. Additionally, the SWPPP must describe

measures to prevent or control runoff after construction is complete and identify procedures for inspecting, maintaining, and monitoring BMP facilities or other project elements. The proposed project components (pipeline and reservoir) would each affect over one acre during construction and therefore would require preparation of a SWPPP. Required elements of a SWPPP include:

- Site description addressing the elements and characteristics specific to the site,
- Descriptions of BMPs for erosion and sediment controls,
- BMPs for construction waste handling and disposal,
- Implementation of approved local plans,
- Proposed post-construction controls, and
- Non-storm water management.
- Procedures for monitoring BMP performance

Waste Discharge Requirements

Article 4 of the Porter-Cologne Act (California Water Code § 13260-13274), states that persons discharging or proposing to discharge waste that could affect the quality of waters of the State (other than into a community sewer system) shall file a Report of Waste Discharge (ROWD) with the applicable RWQCB. For discharges to surface water an NPDES permit is required, which is issued under both state and federal law; for other types of discharges, such as waste discharges to land (e.g., wastewater or spoils disposal), WDRs are required and are issued exclusively under state law.

Local

San Bernardino County

The County is in compliance with CWA 402 through its NPDES permit (CAS618036) requirements. One requirement of their NPDES permit includes requiring certain development and re-development projects to prepared and implement Water Quality Management Plans (WQMP). A WQMP implements a variety of structural and non-structural BMP's that are intended to protect storm water quality.

The County supports the following watershed protection principles and policies and considerations as stated in the County General Plan (URS, 2007):

- Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels; minimize impacts from storm water and urban runoff on the biological integrity of natural drainage systems and water bodies;
- Minimize changes in hydrology and pollutant loading; require incorporation of controls including structural and non-structural BMPs to mitigate any projected increases in pollutant loads and flows; ensure that post-development runoff rates and velocities from a site do not adversely impact downstream erosion, stream habitat; minimize the quantity of storm water directed to impermeable surfaces; and maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;
- Preserve wetlands, riparian corridors, and buffer zones; establish reasonable limits on the clearing of vegetation from project sites;

- Encourage the use of water quality wetlands, biofiltration swales, watershed-scale retrofits, etc., where such measures are likely to be effective and technically and economically feasible;
- Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from development sites; and
- Establish development guidelines for areas particularly susceptible to erosion and sediment loss.

3.7.2 Setting

Regional Setting

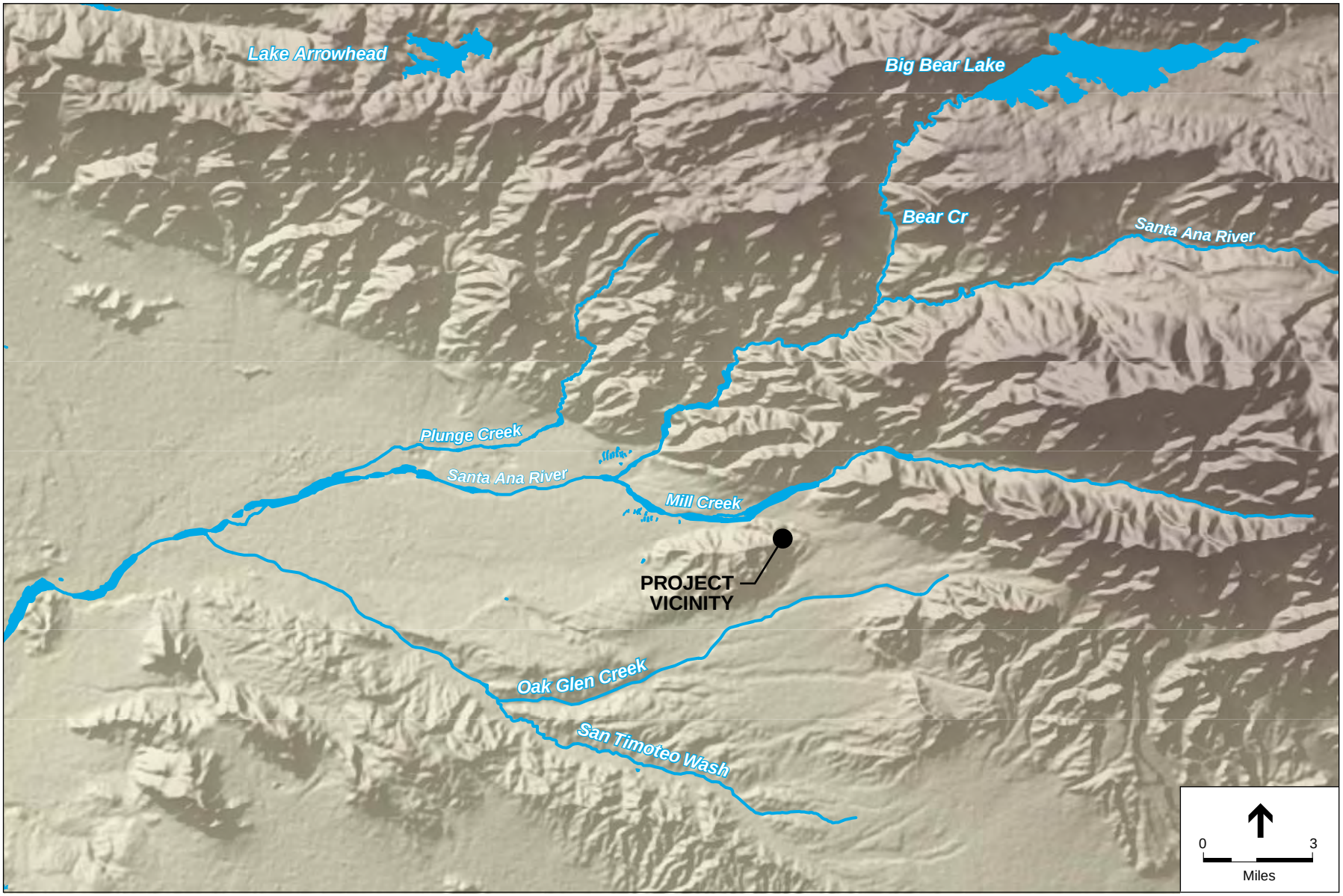
The proposed project area is located within the Santa Ana River watershed, which is the largest coastal watershed in Southern California. The main stem of the Santa Ana River flows from the San Bernardino Mountains to the Pacific Ocean. The proposed project area is in the Crafton Hills, approximately 4.5 miles to the southeast of the confluence of the Santa Ana River and Mill Creek. **Figure 3.7-2** identifies major surface water resources in the region.

The climate in the proposed project area is considered Mediterranean, with hot and dry summers and mild, wet winters. The average annual rainfall in the region ranges from 13 to 16 inches, most of it occurring between November and March; however, summer thunderstorms can create flash flooding events in the desert regions. The Santa Ana River experiences heavy flows in the winter time during storm events. Historically, the river has had intermittent flow through most of the summer as recorded by the USGS at the E Street Gaging Station (11059300), the nearest main stem river gage to the project site. The USGS also operates the San Timoteo Creek Gaging Station (11057500) prior to its confluence with the Santa Ana River. Historically, this creek has also had intermittent flows through the summer months.

Project Area Setting

The watershed within the Crafton Hills generally drains to the south, towards the Yucaipa Regional Park. The existing Crafton Hills reservoir was constructed in an unnamed intermittent drainage in the Crafton Hills. The local or contributing watershed area for the existing reservoir is approximately 21 acres, as determined by the local topography of the surrounding hills, the runoff from which drains to the reservoir.

The proposed reservoir enlargement area would be located in an existing canyon adjacent to the existing reservoir. The canyon watershed has an area of about 62 acres and outflows by way of an unnamed drainage. The watershed boundary begins to the north of the enlargement site at a ridge top in the Crafton Hills. The boundary follows ridges on both sides of the canyon. The location of the proposed dam would capture runoff from the upper 44 acres of the watershed, or about 71 percent of the watershed. After project construction, the enlarged reservoir would have a contributing watershed that includes the upper 44 acres of the unnamed drainage as well as the contributing 21 acres from the existing reservoir. In total, the reservoir enlargement area would have a contributing watershed of about 65 acres.



SOURCE: USGS; ESA, 2007.

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Figure 3.7-2

Major Surface Water Resources

The unnamed drainages in the Crafton Hills convey storm water to impoundments maintained for recreational uses at the Yucaipa Regional Park. The drainages containing the existing Crafton Reservoir and the proposed enlargement area drain storm water to Lake 2, which is the second reservoir in a series of three connected reservoirs at the Yucaipa Regional Park. The three Lakes at the Yucaipa Regional Park are supplied with water from SBVMWD. Although there are no intentional releases of water from the Yucaipa Regional Park reservoirs into Oak Glen Creek, the impoundments are designed with a weir system that allows for overflow into Oak Glen Creek if necessary during peak flood events. Oak Glen Creek feeds San Timeteo Creek which feeds the Santa Ana River. (See **Figure 3.7-3**)

Water Quality

Total Maximum Daily Load

Section 303(d) of the CWA requires that each state identify water bodies or segments of water bodies that are "impaired" (i.e., do not meet one or more of the water quality standards established by the state). These waters are identified in the Section 303(d) list as waters that are polluted and need further attention to support their beneficial uses. Once the water body or segment is listed, the state is required to establish TMDL for the pollutant. A TMDL is the maximum amount of a pollutant that a water body can receive and still meet the water quality standards. Typically, TMDL is the sum of the allowable loads of a single pollutant from all contributing point and nonpoint sources.

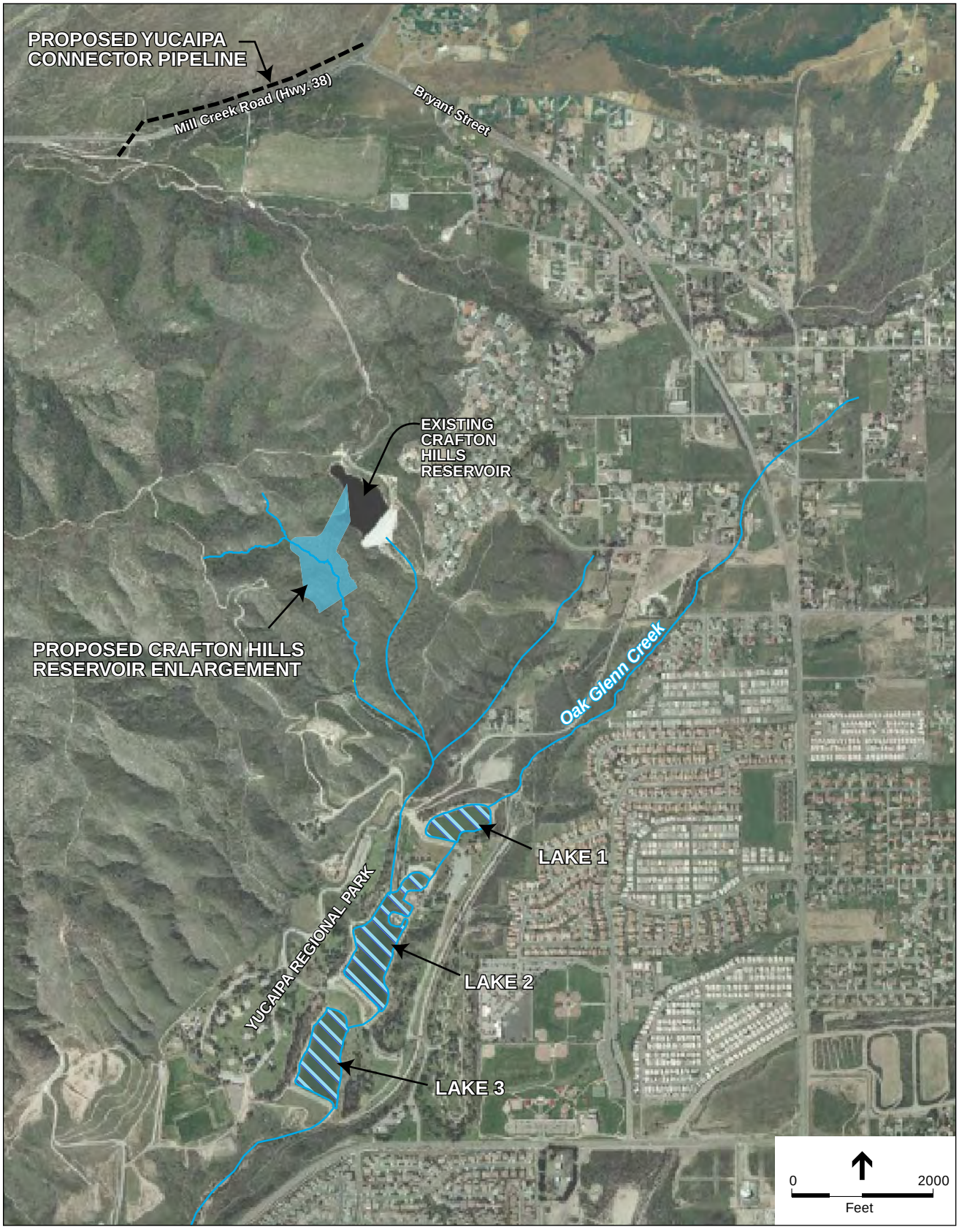
Table 3.7-3 below, summarizes the impaired water bodies on the SARWQCB 2006 Clean Water Act Section 303(d) list near the proposed project site. The SARWQCB is in the process of developing TMDL amounts for pathogens in these waterways.

TABLE 3.7-3
IMPAIRED WATER BODIES IN THE PROJECT AREA

Water Body/Reach Name	Pollutant/Stressor	Potential Source
Mill Creek (Reach 1)	Pathogens	Unknown Nonpoint Source
Santa Ana River (Reach 4)	Pathogens	Nonpoint Source

SOURCE: RWQCB, 2006

As described in Table 3.7-1 above, Mill Creek Reach 1 and Reach 4 of the Santa Ana River have several beneficial uses that could be adversely affected by the identified pollutants (pathogens) listed above. Regulated water bodies near and downstream of the proposed project site support many beneficial uses that range from Municipal and Domestic Supply, Agricultural Supply, Groundwater Recharge, Water Contact and Non-Contact Water Recreation, Warm Freshwater Habitat, Wildlife Habitat, and Preservation of Rare and Endangered Species, which could be affected by identified pollutants.



SOURCE: Chambers Group Inc., 2008

DWR - Crafton Reservoir . 206008.04

Figure 3.7-3
Surface Water Features
in the Project Area

Groundwater

The proposed connector pipeline alignment corridor lies over the Bunker Hill Groundwater Sub-Basin located in the upper reaches of the Santa Ana River watershed (Upper Santa Ana Water Resources Association, 2007). Groundwater levels in the proposed project area have varied widely over the years due to regional groundwater extraction. Groundwater depth measurements in November 1983 indicated that the water table ranged between 55 feet and 93 feet below ground surface (bgs). The groundwater table three miles to the west, near recharge basins, has risen consistently over the past 70 years due to improved management and more recently, from the application of imported water through the East Branch of the California Aqueduct, which has offset some of the demand for groundwater. The depths to groundwater were greater than 200 feet bgs in 1945 and 1936. The groundwater table still rises and falls seasonally, however, the magnitude of those fluctuations are not as extreme as they were in the past (DWR, 2006).

The proposed reservoir enlargement area lies over the Yucaipa Groundwater Basin. However, the Crafton Hills are excluded from this groundwater basin, likely due to their sudden rise in elevation and the underlying geology. Groundwater in the reservoir enlargement area is likely held in deep bedrock fractures and shear zones and therefore is not readily available for extraction. The groundwater level in the east rim of the existing Crafton Hills Reservoir varies in depth below the ground surface between 120 and 155 feet.

3.7.3 Impact Assessment

The proposed project's potential impacts were assessed using the significance criteria identified in Environmental Checklist in Appendix G of the *CEQA Guidelines*. The following sections discuss the key issue areas identified in the *CEQA Guidelines* with respect to the proposed project's potential effect on hydrology and water quality. Significance thresholds are identified and a significance conclusion is made following the discussion.

Water Quality

This section discusses the following CEQA Checklist questions:

> *Would the project violate any water quality standards or waste discharge requirements?*
>
> *Would the project substantially degrade water quality?*

Significance Threshold

The proposed project would result in a significant impact if the project resulted in discharge of sediments or pollutants that would violate any water quality standard, degrade the water quality, or affect the beneficial uses of receiving water. Additionally, should the proposed project contribute any pollutant constituents to impaired water bodies, the project would result in a significant impact.

Impact Analysis

Construction

Construction of the proposed reservoir enlargement and connector pipeline would involve earthmoving activities such as excavation, grading, soil stockpiling, and filling. Construction activities could result in soil erosion and the subsequent discharge of sediment to down gradient surface waters or drainages (i.e., Mill Creek, Oak Glen Creek and ultimately the Santa Ana River). Sedimentation of down gradient waterways could degrade water quality and affect the associated beneficial uses. Construction activities would also involve the use and handling of chemicals such as, but not limited to, oil, fuels, and lubricants. In the event of accidental release of such chemicals, such as spills during fueling of equipment or vehicles, the chemicals could come into contact with storm water runoff and flow into the nearby water bodies, thus affecting surface water quality and or absorb into the soil and affect groundwater quality. Due to the identified beneficial uses in down gradient water bodies (Table 3.7-1) and the existing down gradient impaired water bodies (Table 3.7-2) the proposed project's construction activities could result in a significant impact without mitigation.

The depth to groundwater in the vicinity of the proposed connector pipeline is expected to range between 55 feet and 93 feet bgs. To install the proposed pipeline, excavation up to 25 feet would be required. Therefore, construction of the proposed pipeline would not require groundwater dewatering or discharge.

DWR would be required to obtain coverage under the Construction General Permit (Order No. 99-08-DWQ) and prepare a SWPPP since the construction areas would be greater than one acre in size. The SWPPP would include BMPs to control erosion, sedimentation, and hazardous materials release. The SARWQCB also would require that the SWPPP contain the necessary BMPs to meet their waste discharge requirements. Additionally, if the drainage being affected by the proposed reservoir enlargement is determined to be under the jurisdiction of the U.S. Army Corp of Engineers pursuant to Section 404 of the CWA, DWR would be required to obtain a Section 404 permit, which would trigger a CWA Section 401 Water Quality Certification from the SARWQCB. Compliance with the SWPPP BMPs and other federal and state regulations would ensure impacts to water quality from construction activities are less than significant.

Operation

Operation of the proposed connector pipeline would not affect water quality, require waste discharge requirements, or otherwise degrade water quality. The pipeline would be constructed underground and would be used as a bypass pipeline. The proposed uses of this connector pipeline would not result in water quality impacts.

Operation of the proposed reservoir and dam and associated maintenance road would not violate water quality or waste discharge requirements. The reservoir would be filled with imported raw water and then distributed to downstream water purveyors. The proposed project includes a maintenance road, which if improperly maintained could initiate or exacerbate rill and gully formation and/or erosion by concentrating runoff. Without implementation of BMPs in the

design, construction, and long term operation/maintenance of the roadway, significant erosion could result. As a result, Mitigation Measure HYDRO-1 is required to ensure long-term BMPs are implemented for the roadway.

Similar to the existing dam, the proposed dam would include a system for collecting seepage and returning it to the reservoir. Even with this return system in place, some seepage may be lost to the unnamed drainage below the dam. However, the volume would be small and would not be expected to reach the Yucaipa Regional Park impoundments. Once constructed, the expanded reservoir would not affect water quality downstream of the dams.

Mitigation Measures

HYDRO-1: The SWPPP shall include but not be limited to the following long-term BMPs for the roadway:

- Rock-lined or vegetated cut slope protection;
- Stabilization of cut slope surfaces;
- Adequate road drainage (e.g., provide frequent outlets for the road surface to drain); and
- Energy dissipation for the drains on the outboard side.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measure HYDRO-1 would ensure that long-term BMPs are implemented for the maintenance road.

Drainage and Flooding

This section discusses the following CEQA Checklist questions:

Would the project substantially alter the existing drainage pattern of the site or area (including through the alteration of the course of a stream or river, or by substantially increasing the rate or amount of surface runoff) in a manner that would result in flooding on- or off-site?

Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Would the project create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Would the project place housing within a 100-year flood hazard area, as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Would the project place within a 100-year flood hazard area structures that would impede or redirect flood flows?

Significance Threshold

A significant impact would result if the proposed project were to result in increased runoff, on-site or off-site flooding, exceed storm drain infrastructure, place structures within a 100-year flood plain that would impede flood flows, or result in increased storm water velocity that would cause erosion.

Impact Analysis

Drainage

The proposed reservoir enlargement would substantially alter the drainage pattern of the canyon, due to capture of runoff behind the new dam and recontouring of the drainage topography by the spoil area. However, the SWRCB, Division of Water Rights would require occasional releases of impounded water as a condition of approval of the Section 401 Water Quality Certification for the proposed project. Therefore, the proposed project would not result in a substantial change in surface water runoff from the proposed project site. The drainage terminates at the Yucaipa Regional Park impoundments, which are fed primarily by SBVMWD. The drainage alteration would not result in an increase in flooding or erosion and would not result in runoff that would exceed the capacity of local storm drains. The proposed reservoir enlargement would result in less than significant impacts to drainage patterns, runoff rates, and associated flooding.

Flood Plain

The proposed project does not include the construction of any residential components. There would be no impact to residential structures due to flood hazard. The proposed project does include the construction of an underground connector pipeline that would be located within the 100-year flood hazard area of Mill Creek, as mapped by FEMA (see Figure 3.7-2**)**. Because the pipe would be located underground and only appurtenant facilities such as blow-off valves and pipeline access vaults would remain above ground, surface flood waters would not significantly be impeded or redirected. There would be no structures built within the flood hazard area that could potentially impede or redirect flows.

The proposed project would not affect the inundation zone or local floodplain downstream of the dams nor increase the risk of flooding in other areas. The emergency overflow system for the expanded reservoir would be the same as under current conditions, located at the existing dam. No emergency overflow would be needed at the new dam. As a result, the inundation zone assessed for the original dam would not change substantially. As described below for impacts related to embankment failure, in the event of dam failure and the uncontrolled release of water from the expanded reservoir, flood flows would flow into and through the reservoirs in Yucaipa Regional Park and empty into a tributary to Oak Glen Creek. Flood flows would be contained within the tributary channel. Impacts from flooding would be less than significant.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. The proposed reservoir enlargement would result in less than significant impacts to drainage patterns, runoff rates, and associated flooding. The proposed project would not affect the local floodplain nor increase the risk of flooding in other areas.

Embankment Failure

This section discusses the following CEQA Checklist question:

> *Would the project expose people or structures to a substantial risk of loss, injury, or death involving flooding, includes flooding as a result of the failure of a levee or dam?*

Significance Threshold

A significant impact would result if the proposed reservoir would cause a threat to life or property damage in the event that uncontrolled water was released from the reservoir due to dam failure.

Impact Analysis

As described in previous chapters, the proposed reservoir enlargement would occur in the Crafton Hills and would have a minimum water surface elevation of 2,905 feet and a normal maximum water surface elevation of 2,925 above mean seal level (msl). The proposed earth-fill dam that would impound the reservoir would have a maximum height of 90 feet. A catastrophic dam failure at this elevation could release as much as 225 acre feet of water to downstream land uses. At present, downstream land uses included the Yucaipa Regional Park and residential developments.

DWR completed a dam inundation study to determine the potential impacts to downstream property owners in the event of dam failure and the uncontrolled release of water from the expanded reservoir. The proposed project would not substantially affect the inundation zone or local floodplain downstream of the dams nor increase the risk of flooding in other areas (DWR, 2008b). In the event of a breach of either the existing or proposed dam, flood waters would flow into Reservoir No. 2 at Yucaipa Regional Park, breach Yucaipa Dam No. 2, flow into Reservoir No. 1, breach Yucaipa Dam No. 1, and flow into a tributary of Oak Glen Creek. The flood waters would be confined to the improved channel of this tributary without overtopping (DWR, 2008b). Peak flow of uncontrolled flood waters upon reaching this tributary would be approximately 10,300 cfs, well below the design flow of the improved channel of 16,800 cfs, as verified by the San Bernardino Flood Control District (DWR, 2008b). The enlarged reservoir is designed to overflow through the existing weir at the existing dam. No emergency overflow would be needed in the new dam. As a result, the inundation zone assessed for the original dam would not change substantially.

In the previous 1994 WIP EIR and the 1998 EBX SEIR, DWR was required in Mitigation Measure RU-7 to notify all property owners downstream of the Crafton Hills Reservoir about the potential for flooding or inundation due to dam failure. Similarly, Mitigation Measure HYDRO-2 below requires DWR to notify property owners downstream of the new proposed dam and reservoir enlargement area about the potential for flooding as a result of emergency conditions and/or dam failure. The proposed project would comply with building code and DSOD requirements.

Mitigation Measures

HYDRO-2 (Previously RU-7): Prior to approval of the proposed project, DWR shall notify all property owners and residents that could be subjected to flooding or inundation in the event of an upset condition or dam failure.

Significance Conclusion

Less than significant. The proposed project would not substantially change the existing inundation zone for the Crafton Hills Reservoir and would comply with DSOD requirements. All property owners and residents potentially subjected to flooding in the event of dam failure would be notified prior to project approval.

Groundwater Depletion

This section discusses the following CEQA Checklist question:

Would the project substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level that would not support existing land uses or proposed uses for which permits have been granted)?

Significance Threshold

A significant impact would result if the proposed project were to cause a lowering of the groundwater table or reduce the production rate of existing groundwater wells. A significant impact would also result if the proposed project were to interfere with groundwater recharge by creating large impervious surface areas that would cause the groundwater table to be lowered due to reduced recharge surface area.

Impact Analysis

Groundwater Depletion

The proposed project would not directly require the use of any groundwater resources. It is not anticipated that new wells or groundwater withdrawals from existing wells would be required to complete this project. The project would have no impact on groundwater depletion. Moreover, as

described in the previous SEIR for the East Branch Extension – Phase 1 (DWR 1998), some of the imported State Water Project water that flows through the East Branch Extension and is stored in the Crafton Hills Reservoir is applied to groundwater recharge basins by the San Gorgonio Pass Water Agency and the San Bernardino Valley Municipal Water District. The proposed project would continue to benefit regional groundwater basins.

Groundwater Recharge

The proposed connector pipeline would install approximately a half mile of 48-inch diameter pipeline underground, the installation of which would require soil compaction around the pipe. The pipeline and the compacted soil surrounding it would reduce the infiltration rate of water along the pipeline route. Pipeline design includes measures to cover and hydro-seed the disturbed ground surface. The revegetated area would retain storm water rather than have it run-off the site. The area of reduced infiltration would not be of sufficient size to effectively lower the groundwater table. Impacts to the site's groundwater recharge capability would be less than significant.

The proposed reservoir enlargement would involve placement of moderately compacted soils at the bottom of the proposed reservoir to shape the enlarged reservoir bottom so that water will drain towards the existing outlet when the reservoir is lowered below the normal minimum pool. Even with these reservoir shaping measures that may reduce the permeability of the reservoir bottom, water inevitably would seep into the ground from the reservoir. The construction of the proposed reservoir enlargement and dam would reduce the amount of infiltration that could occur in the drainage during precipitation events, but would introduce a new permanent water source at the site. However, due to the relatively steep terrain and the high elevation of the Crafton Hills, this area is not considered by the Upper Santa Ana River Watershed Integrated Regional Water Management Plan (2007) as part of the Yucaipa Groundwater sub-basin and does not serve as a significant recharge area to the groundwater basin. Therefore, construction of the proposed reservoir enlargement and dam would not significantly affect groundwater levels by reducing the groundwater recharge area.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. The proposed project would not deplete groundwater supplies or interfere with groundwater recharge.

Seiche, Tsunami, Mudflow

This section discusses the following CEQA Checklist question:

Would the project result in inundation by seiche, tsunami, or mudflow?

Significance Threshold

A significant impact would result if the proposed project was located in an area where a seiche, tsunami, or mudflows could damage structures or pose a risk to people in the project area.

Impact Analysis

Tsunamis are waves caused by an underwater earthquake, landslide, or volcanic eruption. Since the proposed project site is located approximately 50 miles inland and above 2,000 feet, it could not experience a tsunami. A seiche is a rhythmic motion of water in a partially or completely landlocked water body caused by landslides, earthquake-induced ground acceleration, or ground offset. The proposed reservoir enlargement area is surrounded by the steep slopes of the Crafton Hills which have been identified as having a moderate landslide potential. If the adjacent slopes were not prepared adequately, massive landslides adjacent to the reservoir could generate a seiche wave that could overtop the dam. As discussed in **Section 3.5 Geology, Soils, Seismicity and Mineral Resources,** DWR would conduct geotechnical evaluations of the surrounding slopes to assess their landslide potential. Potential unstable slopes would be removed or stabilized as part of the project design in compliance with DSOD requirements. As a result, there would be no project impacts due to seiches, tsunamis, or mudflows.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. The proposed project would not result in inundation by a seiche, tsunami, or mudflow.

3.7.4 Mitigation Measure Summary Table

Table 3.7-4 presents the impacts and mitigation summary for Hydrology and Water Quality.

TABLE 3.7-4
HYDROLOGY AND WATER QUALITY IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance After Mitigation
Water Quality: The proposed project would have less than significant impacts on water quality with implementation of the mitigation measure.	HYDRO-1	Less than significant
Drainage and Flooding: The proposed project would have a less than significant impact on drainage, flooding and erosion.	None required	Less than significant

TABLE 3.7-4
HYDROLOGY AND WATER QUALITY IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance After Mitigation
Embankment Failure: The proposed project would have a less than significant effect on flooding due to dam failure.	HYDRO-2	Less than significant
Groundwater Depletion: The proposed project would not deplete groundwater supplies or interfere with groundwater recharge.	None required	Less than significant
Seiche, Tsunami, and Mudflow: The proposed project would not result in inundation by a seiche, tsunami, or mudflow.	None required	Less than significant

SOURCES: ESA, 2008

3.8 Land Use, Agriculture and Recreation

This chapter describes the existing land uses, agricultural resources, and recreational facilities in the vicinity of the proposed project and evaluates potential impacts associated with implementation of the proposed project. This chapter describes the regulations that govern land use, agriculture, and recreation in the project area, including zoning ordinances, general plan policies, and airport land use plans. Although as a state agency DWR is not required to comply with local land use designations, this section evaluates the proposed project's consistency with local land use goals and policies.

3.8.1 Regulatory Framework

State

California Farmland Mapping and Monitoring Program

The California Department of Conservation, under the Division of Land Resource Protection, has established the Farmland Mapping and Monitoring Program (FMMP). The FMMP monitors the conversion of the state's farmland to and from agricultural use. The map series identifies eight classifications and uses a minimum mapping unit size of 10 acres. The FMMP also produces a biannual report on the amount of land converted from agricultural to non-agricultural use. The FMMP maintains an inventory of state agricultural land and updates its "Important Farmland Series Maps" every two years (Department of Conservation, 2007a). Important farmlands are divided into the following five categories based on their suitability for agriculture:

> **Prime Farmland.** Prime Farmland is land with the best combination of physical and chemical characteristics able to sustain long-term production of agricultural crops. This land has produced irrigated crops at some time within the four years prior to the mapping date.
>
> **Farmland of Statewide Importance.** Farmland of Statewide Importance is land that meets the criteria for Prime Farmland but with minor shortcomings such as greater slopes or lesser soil moisture capacity.
>
> **Unique Farmland.** Unique Farmland has even lesser quality soils and produces the state's leading agricultural crops. This land is usually irrigated but also includes non-irrigated orchards and vineyards.
>
> **Farmland of Local Importance.** Farmland of Local Importance is land that is important to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee.
>
> **Grazing Land.** Grazing Land is land on which the existing vegetation is suited to the grazing of livestock.

Williamson Act

The California Land Conservation Act of 1965, also known as the Williamson Act, is designed to preserve agricultural and open space lands by discouraging their premature and unnecessary conversion to urban uses. Williamson Act contracts, also known as agricultural preserves, create

an arrangement whereby private landowners contract with counties and cities to voluntarily restrict their land to agricultural and compatible open-space uses. Local governments may identify compatible uses permitted with a use permit.

Local

The local land use regulations that apply to this proposed project include the following planning documents which govern land use in the area.

County of San Bernardino General Plan

The proposed project is subject to the goals and policies of the County of San Bernardino 2007 General Plan (County General Plan).

City of Yucaipa General Plan

The proposed project is subject to the goals and policies of the City of Yucaipa 2004 General Plan (Yucaipa General Plan). The following is a selected list of General Plan goals and actions from the Open Space Element that are applicable to the proposed project.

Goal OS-2: Manage scarce natural resources for preservation. Scarce resources include sensitive biological resources, cultural resources, air quality, groundwater supply and quality and open space.

> **Action 2:** Cooperate with the Crafton Hills Open Space Conservancy, the Yucaipa Conservancy, and the Wildlands Conservancy in efforts to preserve and protect areas of unique character and/or resources.

Goal OS-6: Conserve existing populations of native plant and wildlife species by preserving adequate habitat wherever appropriate.

> **Action 2:** Cooperate with other agencies and the Crafton Hills Open Space Conservancy, the Yucaipa Conservancy, and the Wildlands Conservancy in the establishment of wildlife corridors and the preservation of open space.

City of Redlands General Plan

The proposed project is subject to the goals and policies of the City of Redlands 1995 General Plan (Redlands General Plan). The following is a selected list of General Plan polices from the Open Space and Conservation Element that are applicable to the proposed project.

> **Policy 7.21m:** Work with the Crafton Hills Open Space Conservancy to preserve, enhance, and maintain the Crafton Hills as an ecosystem.

3.8.2 Setting

Regional Setting

The proposed project is located within and adjacent to the City of Yucaipa, in southern San Bernardino County. This portion of San Bernardino County is defined as the Valley Planning Region, which is bounded by the San Bernardino and Angeles National Forests to the north and east (including the San Bernardino and San Jacinto Mountains), the Yucaipa and Crafton Hills to the east, and the county borders with Los Angeles, Orange, and Riverside Counties. The Valley Planning Region includes only 2.5 percent of the land in San Bernardino County but includes 75 percent of the county's population, including all the Inland Empire cities such as San Bernardino and Riverside (URS, 2007).

Project Area Setting

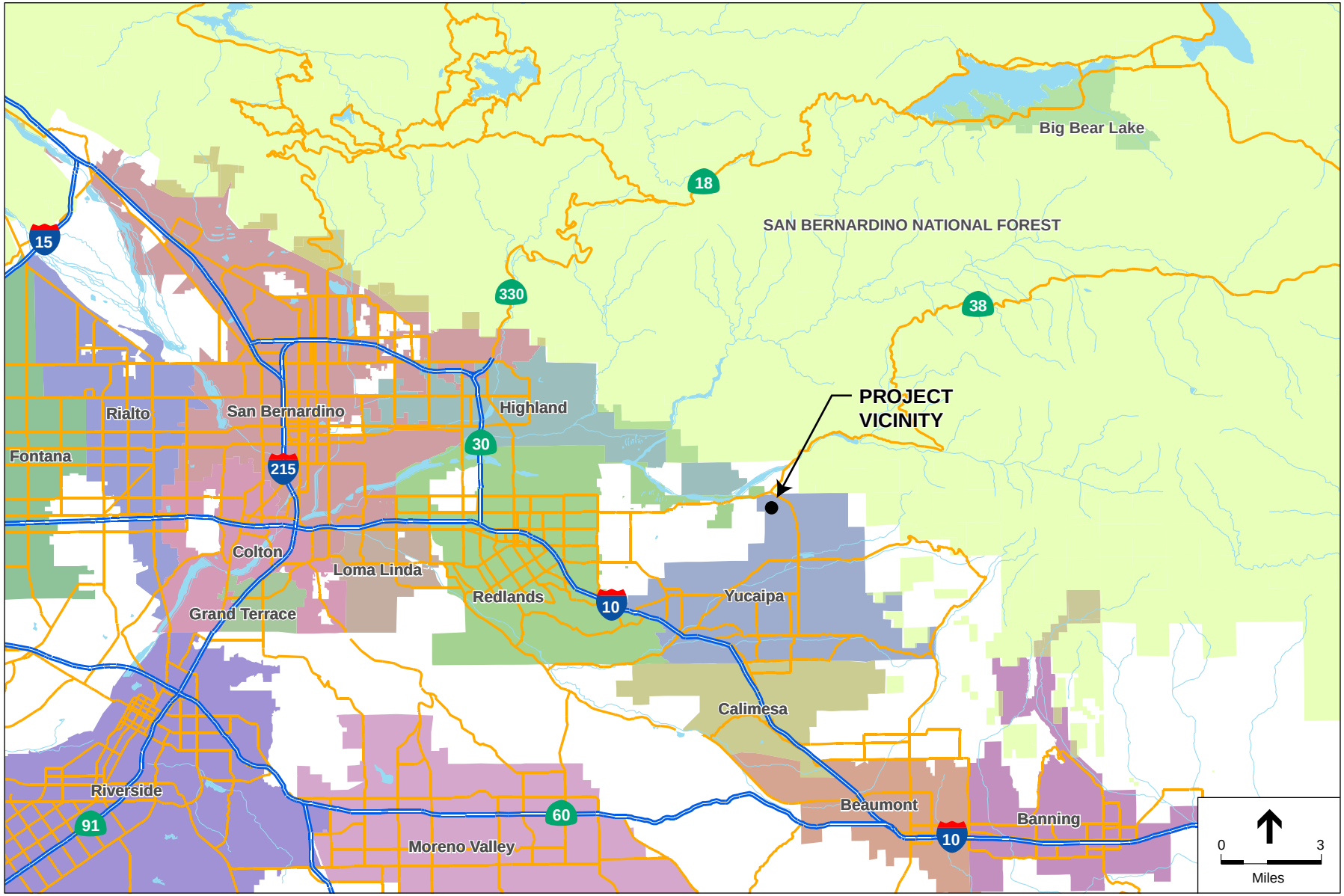
The Crafton Hills Reservoir is located in the easterly edge of Crafton Hills, within the City of Yucaipa. The proposed pipeline alignment would run through land belonging to the City of Yucaipa, the City of Redlands, and unincorporated San Bernardino County. The city boundaries are shown in **Figure 3.8-1**. Land uses in the project vicinity are illustrated in **Figure 3.8-2**. Land uses in and around the project corridor include residential, industrial, and open space. Industrial land uses in the vicinity of the proposed project include regional parks and recreation areas. Specific descriptions of land uses associated with each component of the proposed project are provided below. Properties are either privately owned or under the jurisdiction of the Crafton Hills Open Space Conservancy (Conservancy). **Figure 3.8-3** identifies land ownership in the project area.

Sensitive Receptors

Some land uses are considered more sensitive to environmental pollutants and hazards than others. Residences, schools, rest homes, hotels, and hospitals are generally more sensitive to air pollutants, noise, and toxic materials than commercial and industrial land uses. The closest sensitive receptors are residential neighborhoods located within 500 feet southeast of the existing Crafton Hills Reservoir and approximately 200 feet south of the proposed spoils area. The closest residential land uses to the proposed connector pipeline are approximately 1,150 feet southeast of the intersection of SR-38 and Bryant Street. A new residential development is currently under construction within 50 feet of the proposed pipeline corridor on the south frontage of Mill Creek Road. The locations of nearby residential areas are shown in Figure 3.2-1 in Chapter 3.2.

Pipeline Alignment

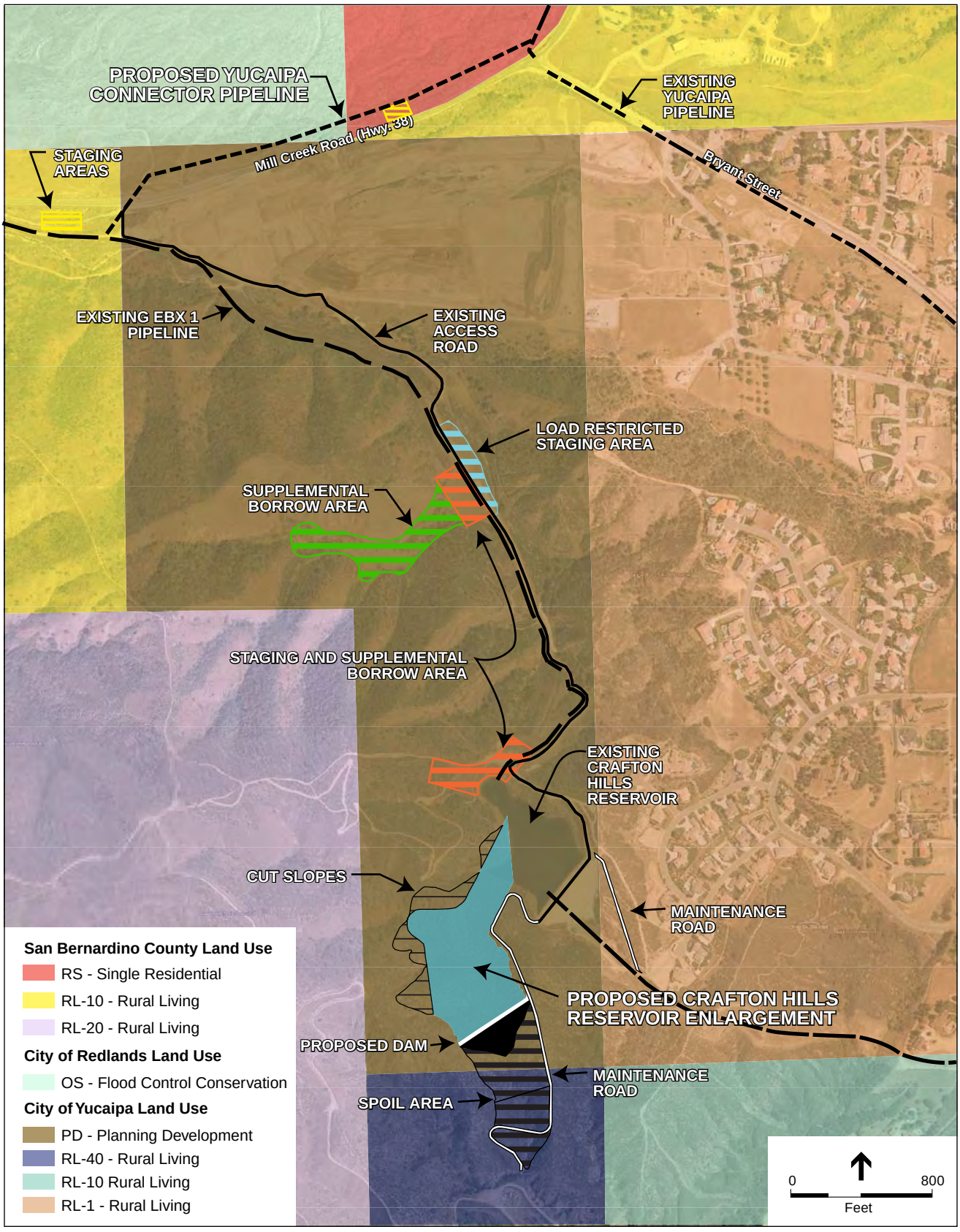
The proposed pipeline alignment would cross into land designated by the City of Yucaipa, the City of Redlands, and unincorporated San Bernardino County as shown in Figure 3.8-1. The segment of pipeline located within unincorporated San Bernardino County is designated as Single Residential (RS) on the Land Use Map in the County General Plan Land Use Section. The RS zoning district denotes areas where there are single-family homes on individual lots and



SOURCE: SANBAG, 2008; Riverside County GIS, 2007.

DWR - Crafton Reservoir . 206008.04

Figure 3.8-1
City Boundaries

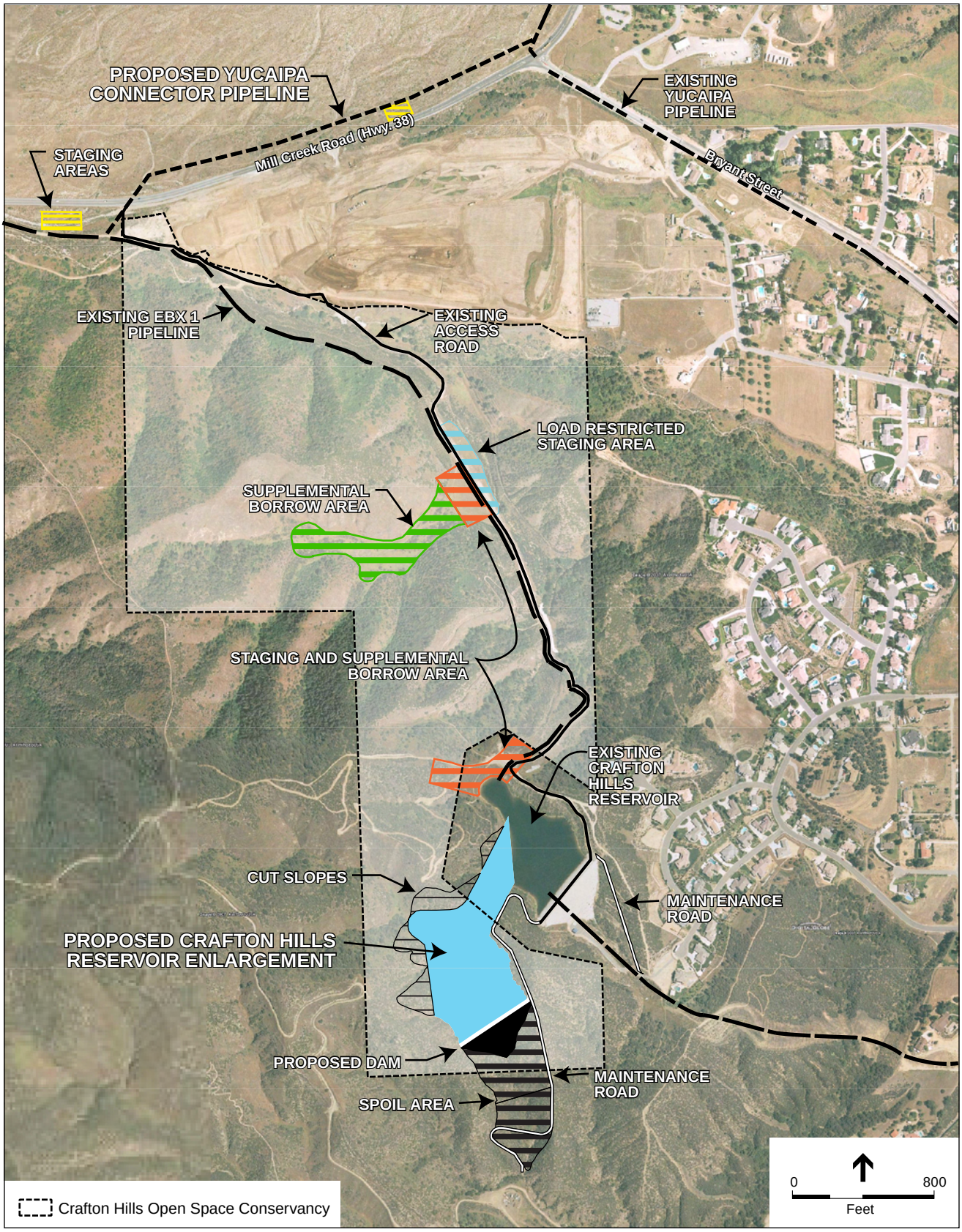


SOURCE: GlobeXplorer, 2007; DWR, 2007; City of Yucaipa, 2008.

DWR - Crafton Reservoir . 206008.04

Figure 3.8-2

Land Uses in the Project Vicinity



SOURCE: GlobeXplorer, 2007; DWR, 2007.

DWR - Crafton Reservoir . 206008.04

Figure 3.8-3
Local Land Ownership (CHOSA)

accessory, non-residential uses that complement residential land use. The pipeline alignment is compatible with the site's land use classification, as public utilities are accessory uses that complement and support neighboring residential land uses.

The segment of pipeline located within the City of Yucaipa is designated as Planned Development (PD) on the Land Use Map in the City's General Plan Land Use Element. Permitted land uses include crop cultivation, single dwelling units, social care facilities, and animal raising. The pipeline alignment is not compatible with the site's land use classification. However the underground pipeline generally would not preclude surrounding surface land uses from being realized as long as development directly over the pipeline easement is avoided.

The segment of the pipeline located within the City of Redlands is designated as Flood Control on the City's General Plan Land Use Map. Flood Control lands are defined by the Redlands General Plan as areas subject to 100-year flood. The proposed pipeline alignment would not result in aboveground structures that would be incompatible with this designation.

Crafton Hills Reservoir Enlargement

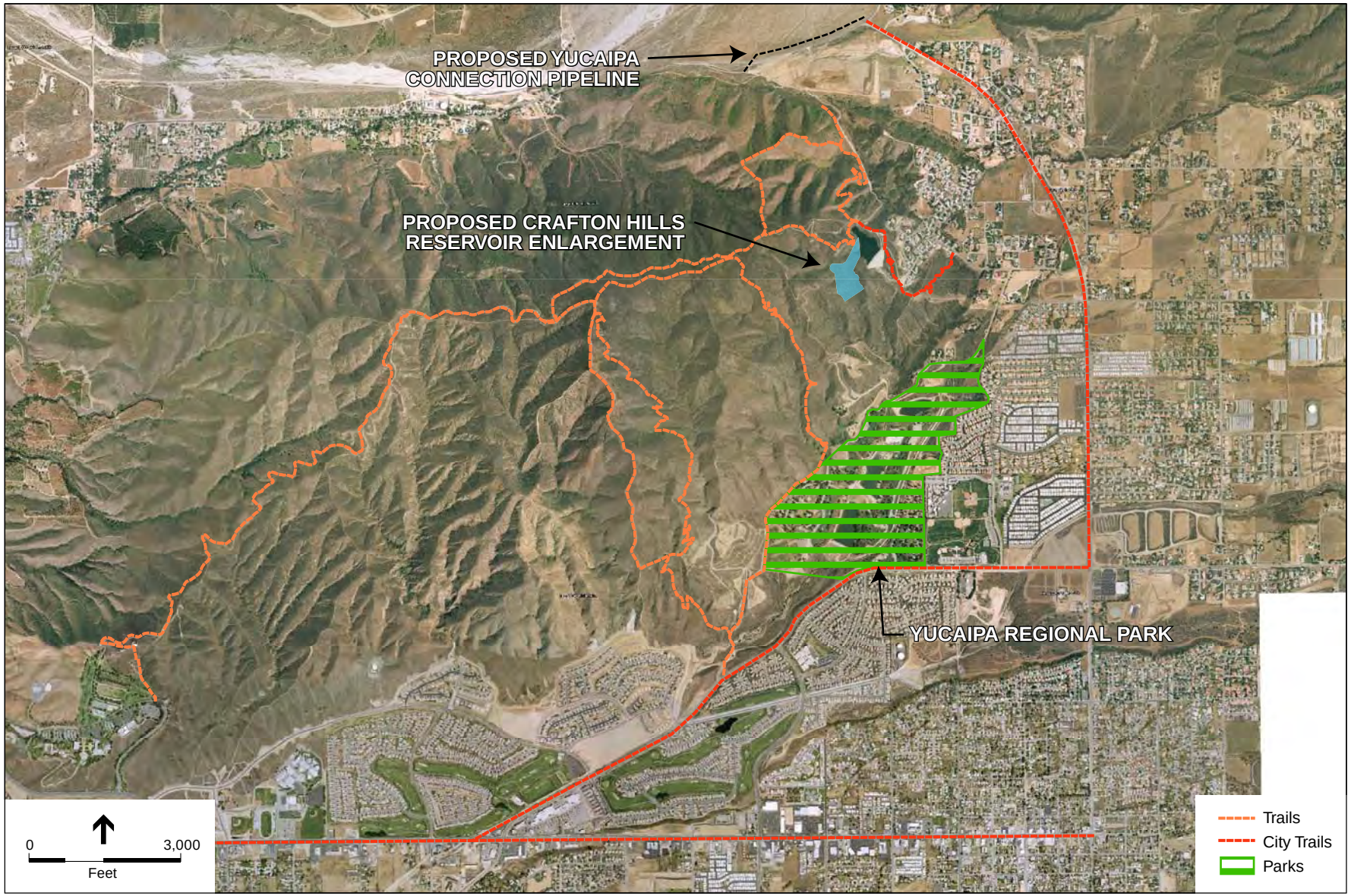
The Crafton Hills Reservoir is owned and operated by DWR. The surrounding open space land needed for the proposed project is owned by private entities, including the Conservancy (Figure 3.8-3). Before initiation of project construction, DWR would buy the land for the enlargement from the private entities. The Crafton Hills Reservoir site is designated as a Planned Development District on the Land Use Map in the Yucaipa General Plan Land Use Element. In the early 1990s, this area was approved for the development of 59 residential lots on approximately 40 acres and approximately 140 acres of open space. Final development plans were never submitted and approval for the development plan expired in mid-1999. Lands under the PD designation are intended for a combination of residential, commercial, industrial, agricultural, open space, and recreation uses and similar and compatible uses. The Crafton Hills Reservoir is consistent with the intended uses as it is compatible with recreational and open space uses. The reservoir does not preclude the surrounding open space lands in the Crafton Hills from being used for recreational purposes. As a water feature, the reservoir attracts wildlife, birds, and waterfowl, which would be considered a benefit to recreational bird watchers.

Agricultural Resources

The proposed pipeline alignment and reservoir enlargement would be constructed on land identified by the California Department of Conservation as Grazing Land (Department of Conservation, 2007b). The proposed project would not be constructed on lands under Williamson Act contracts.

Recreational Facilities

There are a variety of recreational facilities in the project vicinity, including local parks, open spaces, and multi-purpose trails, as described below and indicated in **Figure 3.8-4**.



SOURCE: GlobeXplorer, 2007; Crafton Hills Open Space Conservancy, 2008; City of Yucaipa General Plan, 2008.

DWR - Crafton Reservoir . 206008.04

Figure 3.8-4
Recreational Facilities

US Department of Agriculture Forest Service

The US Department of Agriculture Forest Service (USFS) manages the San Bernardino National Forest, located to the north of the proposed project site. The San Bernardino National Forest (SBNF) includes over 450,000 acres in San Bernardino County, with maximum elevation of 11,500 feet at Mount San Gorgonio. SBNF contains a variety of habitat and over 440 wildlife species, including over 150 threatened, endangered, and sensitive species (USFS, 2007).

As part of the National Forest system, the SBNF is public land set aside for the conservation of natural resources such as trees, water, livestock, minerals, wildlife and recreation (USFS, 2007). The SBNF provides open space and recreational opportunities, including hiking, biking, camping, fishing, and wildlife viewing. SBNF includes over 500 miles of multi-purpose trails, including wilderness trails, motorized trails, and hiking/biking/equestrian trails (USFS, 2007).

San Bernardino County Regional Parks

Yucaipa Regional Park is the closest County-owned park to the project, located approximately 0.5 miles southeast of Crafton Hills Reservoir, on the south side of the Crafton Hills. Yucaipa Regional Park includes 885 acres of land located at the base of the Crafton Hills (San Bernardino County Regional Parks, 2007). Recreational facilities at the park include campsites, recreational vehicle (RV) hook-ups, picnic and grill sites, and showers. Recreational opportunities at the park include camping, fishing, swimming, boating, and volleyball.

San Bernardino County Open Space Plan

The San Bernardino County Open Space Plan delineates various categories of open space in the county, such as trails, wildlife corridors, open space, and areas of critical environmental concern (ACECs). The proposed project area includes regional trails and open space areas that are considered valuable for recreation and agriculture. No ACECs are located near the proposed project.

The Crafton Hills Open Space Area (CHOSA) includes lands in the Crafton Hills above an elevation of 2,400 feet. This open space area is adjacent to Yucaipa Regional Park and provides a continuation of relatively undisturbed habitat and open space. This open space area provides valuable recreational resources and natural habitats for the urban Redlands/Yucaipa area and includes the Crafton Hills Trail.

City of Yucaipa Recreational Facilities

The closest city parks are the Bryant Glen Sports Complex located at 11092 Sunnyside Drive and the Yucaipa Community Park at 34900 Oak Glen Road. Both parks are located adjacent to the Yucaipa Regional Park. The Bryant Glen Sports Complex consists of four multi-purpose playing fields, public restroom facilities, a concession stand, and a playground area. The Yucaipa Community Park is located on 32.5 acres and consists of three multi-purpose ball fields, two tennis courts, two basketball courts, a sand volleyball court, playgrounds, walking trails, group picnic shelters, barbecues, an amphitheater, and restroom facilities.

3.8.3 Impact Assessment

The proposed project's potential impacts were assessed using the significance criteria identified in Environmental Checklist in Appendix G of the *CEQA Guidelines*. The following sections discuss the key issue areas identified in the *CEQA Guidelines* with respect to the proposed project's potential effect on land resources and land use compatibility. Significance thresholds are identified and a significance conclusion is made following the discussion.

Effects to an Established Community

This section discusses the following CEQA Checklist question:

Would the project physically divide an established community?

Significance Threshold

The proposed project would have a significant impact if it physically divided an established community. A substantial adverse physical division could include the construction of a roadway or other physical barrier that would divide an established community.

Impact Analysis

The proposed project includes the construction of a pipeline alignment that would cross and then run parallel to Mill Creek Road. The proposed project also includes the enlargement of a reservoir and construction of a new dam. Construction of the pipeline alignment, reservoir enlargement, and dam would not create a physical barrier that would divide an established community. The surrounding communities are located outside the limits of the project site. No residential dwellings are located along the pipeline corridor. The proposed reservoir enlargement would occur within the Crafton Hills Open Space Area, which does not contain any residential dwellings. There would be no impact.

Mitigation Measures

None required.

Significance Conclusion

No impact. Construction of the pipeline alignment, reservoir enlargement, and dam would not create a physical barrier that would divide an established community.

Consistency with Land Use Plans and HCPs

This section discusses the following CEQA Checklist questions:

Would the project conflict with any applicable land use plan, policy, or regulatory agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Would the project conflict with any applicable habitat conservation plan or natural community conservation plan?

Significance Threshold

The proposed project would have a significant impact if it conflicted with any applicable land use plan, policy, or regulatory agency having jurisdiction over the project, or any applicable habitat conservation plan, or natural community conservation plan.

Impact Analysis

The proposed project is not located within a federally adopted HCP or NCCP or within an Area of Critical Environmental Concern.

Pipeline Alignment

The portion of the pipeline alignment that would be constructed within the City of Yucaipa would be in conflict with the existing land use designation specified by the Yucaipa General Plan. Permitted land uses include crop cultivation, single dwelling units, social care facilities, and animal raising. Although not expressly permitted by the land use designation, the underground pipeline generally would not preclude surrounding surface land uses from being realized. DWR would secure an easement for the pipeline, which would prevent any development directly over the pipeline and within an adequate buffer on either side of the pipeline. Impacts are considered less than significant.

Crafton Hills Reservoir Enlargement

Construction and operation of the proposed project would increase the size of the existing Crafton Hills Reservoir. The existing reservoir is located on land currently owned by the Crafton Hills Open Space Conservancy. The proposed project would displace approximately 18.3 acres of open space for conversion to a water supply reservoir, reducing the amount of open space available in the Crafton Hills and developing land set aside as open space. The proposed project may conflict with the Conservancy's goal to protect and preserve the beauty and natural open space of the Crafton Hills. As previously stated, DWR would purchase the land for the reservoir enlargement.

Mitigation Measures BIO-5 and BIO-11 in Chapter 3.3, Biological Resources, require DWR to prepare special-status species compensation plans for unavoidable impacts of the proposed reservoir enlargement to special-status plants and wildlife. The compensation plan requires at a minimum the purchase of mitigation lands at an approved conservation bank at a minimum 1:1 ratio (land purchased to land impacted). This mitigation would assist in offsetting impacts to open space and natural habitats. Nonetheless, the proposed project would result in the permanent loss of open space and would conflict with the goals of the Conservancy. The loss of open space land for construction of the original Crafton Hills Reservoir was identified as a significant and unavoidable impact in the SEIR certified for the EBX Phase I. Even with the proposed compensation, this loss of open space is considered to be a significant land use impact after mitigation.

Mitigation Measures

Implement Mitigation Measures BIO-5 and BIO-11.

Significance Conclusion

Significant and unavoidable. The proposed project would have a significant and unavoidable impact on land use as it conflicts with the goals of the Crafton Hills Open Space Conservancy and results in a permanent loss of open space.

Effects to Agricultural Areas and Farmland

This section discusses the following CEQA Checklist questions:

Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Would the project conflict with zoning for agriculture or a Williamson Act Contract?

Significance Threshold

The proposed project would have a significant impact if it resulted in substantial adverse effect on designated Prime Farmland, Unique Farmland, or Farmlands of Statewide Importance.

Impact Analysis

The proposed project would not be located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, and therefore, would not result in conversion of farmland to non-agricultural uses. The proposed project area is not located within a Williamson Act contract. As such, there would be no impact.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed project is not located on Prime Farmland, Unique Farmland, or Farmland of Statewide Importance nor is it within a Williamson Act contract.

Effects to Recreational Facilities

This section discusses the following Department significance threshold question:

Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration or disturbance of the facility would occur or be accelerated?

Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Significance Thresholds

The proposed project would have a significant impact if it resulted in the accelerated deterioration and disturbance of local or regional recreational facilities and parks or if it required the construction or expansion of recreational facilities.

Impact Analysis

As shown on Figure 3.8-4, the proposed project would not traverse planned bikeways. Additionally, the proposed project is not a direct population generator, as a housing development would be; therefore, the proposed project would not result in the increased use of regional recreational facilities which would cause accelerated deterioration. The proposed project would also not result in the construction or expansion of any recreational facilities.

A segment of the hiking trail that begins at the Grape Avenue trailhead overlaps with the reservoir access road. This segment would be closed for the duration of construction of the proposed reservoir enlargement, which would cause the northern trails of the Crafton Hills Open Space Area to be difficult to access. This hiking trail will also be affected by the construction of the new maintenance road leading to the western edge of the existing dam. The maintenance road would directly cross over and along the existing City trail. Furthermore, the recreational experience during construction would be affected by construction noise and commotion. Mitigation Measure LU-1 provides for notification to Crafton Hills Conservancy members and posting of signs explaining the construction zone and duration. Mitigation Measure LU-2 would mitigate for the permanent disruption of the City trail. Once construction is complete, recreation access will be restored to the portion of the trail closed due to construction.

A hiking trail runs parallel to the proposed connector alignment that connects trails in the San Bernardino National Forest to the Crafton Hills. This trail could potential experience trail closures as well, during construction of the proposed pipeline. This would result in substantial disturbance to the recreational opportunities available in the area. Impacts would be less than significant with implementation of Mitigation Measure LU-1, which requires notification of trail closures.

Operation of the proposed reservoir enlargement would result in the permanent loss of open space in the Crafton Hills. However, the proposed reservoir enlargement would not have a direct, permanent impact on any trails in the Crafton Hills. Recreational opportunities would remain following the completion of the project. The aesthetic impacts of the reservoir enlargement to recreational hikers, bikers, equestrians are addressed in Chapter 3.1, Aesthetics. The impacts of the reservoir enlargement to open space are addressed above in this chapter. Impacts to recreational facilities due to operation of the proposed project would be less than significant with implementation of mitigation measures.

Mitigation Measures

LU-1: DWR shall notify the Crafton Hills Conservancy members regarding trail closures and shall periodically provide them with updates. DWR shall post signs near trailheads in the vicinity of the construction area noting the duration of construction, the location of closed trails, information on accessing trailheads that avoid the construction area, and a construction contact number. DWR also shall notify the San Bernardino National Forest San Gorgonio Ranger Station regarding trail closures near the proposed connector pipeline.

LU-2: DWR shall allow for hiking access along the new maintenance road once construction is complete in order to allow the City trail to remain intact. If hiking access is not feasible, DWR shall re-route the trail in order to maintain its connection to other trails within the Crafton Hills.

Significance Conclusion

Less than significant with mitigation. The implementation of Mitigation Measure LU-1 would inform recreational visitors on the status and available access locations of the hiking trails. Implementation of Mitigation Measure LU-2 would ensure the City trail network remains intact after project construction is complete.

3.8.4 Mitigation Measures Summary Table

Table 3.8-1 presents the impacts and mitigation summary for Land Use and Recreation.

TABLE 3.8-1
LAND USE AND RECREATION IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance After Mitigation
Effects to an Established Community: The proposed project would have no impact on an established community as it does not include the construction of a roadway or other physical barrier.	None required	No impact
Consistency with Land Use Plans and HCPs: The proposed project would have a significant and unavoidable impact on land use as it conflicts with the goals of the Crafton Hills Open Space Conservancy and results in a permanent loss of open space.	BIO-5 and BIO-11	Significant and unavoidable
Effects to Agricultural Areas and Farmland: The proposed project would have no impact on agricultural areas and farmland.	None required	No impact
Effects to Recreational Facilities: The proposed project would have a less than significant impact on recreational facilities with implementation of mitigation.	LU-1, LU-2	Less than significant

SOURCES: ESA, 2008

3.9 Noise

This chapter provides an overview of the existing noise environment at the proposed project site and surrounding area, the regulatory framework, an analysis of potential noise impacts that would result from implementation of the proposed project, and mitigation measures where appropriate.

3.9.1 Regulatory Framework

Federal

Federal regulations establish noise limits for medium and heavy trucks (more than 4.5 tons, gross vehicle weight rating) under 40 CFR, Part 205, Subpart B. The federal truck pass-by noise standard is 80 dBA (A-weighted decibels) at 15 meters from the vehicle pathway centerline. These standards are implemented through regulatory controls on truck manufacturers.

State

The California Office of Planning and Research (OPR) has guidelines for evaluating the compatibility of various land uses as a function of community noise exposure, as shown in **Figure 3.9-1** below. These noise guidelines are provided in OPR's *General Plan Guidelines* (2003).

The State of California also establishes noise limits for vehicles licensed to operate on public roads. For heavy trucks (greater than 4.5 tons), the State pass-by standard is consistent with the federal limit of 80 dBA at 15 meters. The State pass-by standard for light trucks and passenger cars (less than 4.5 tons, gross vehicle rating) is also 80 dBA at 15 meters from the road centerline. These standards are implemented through controls on vehicle manufacturers and by legal sanction of vehicle operators by state and local law enforcement officials. Noise associated with operation of off-road construction equipment is regulated according to local noise standards for neighboring land uses, as described below.

Local

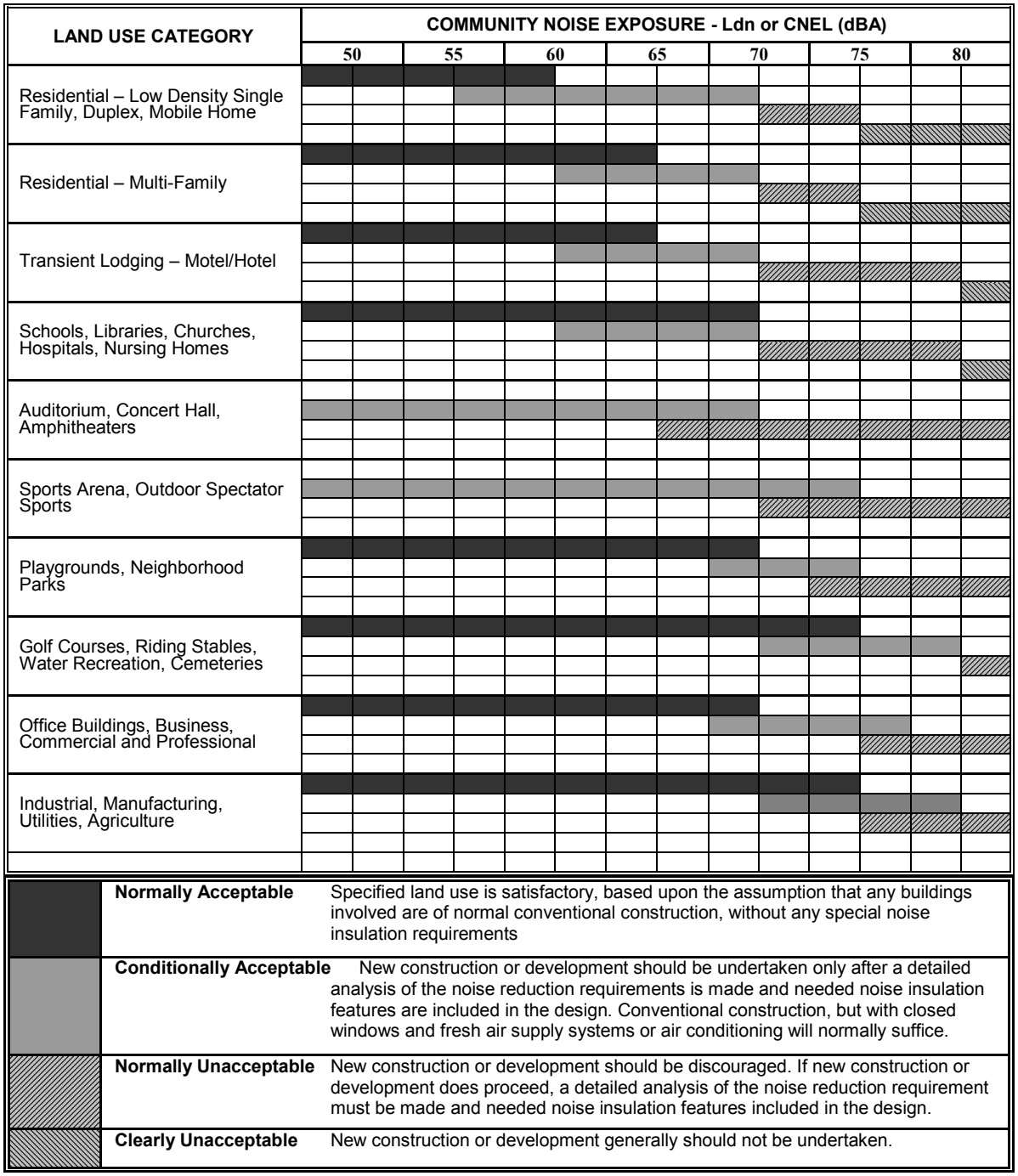
San Bernardino County General Plan

The Noise Element of the San Bernardino County General Plan (URS, 2007) provides noise guidelines for the County. **Table 3.9-1** identifies the County of San Bernardino noise standards by land use category for stationary noise sources. Construction sites are considered stationary noise sources due to operation of relatively stationary construction vehicles and equipment within a defined construction zone.

San Bernardino Development Code 83.01.080 – Noise

Noise Standards. Table 3.9-1 presents the daytime and nighttime noise standards for different land use categories, for noise generated by a stationary source.

FIGURE 3.9-1
LAND USE COMPATIBILITY FOR COMMUNITY NOISE ENVIRONMENT



SOURCE: State of California, Governor's Office of Planning and Research, 2003. *General Plan Guidelines*.

TABLE 3.9-1
SAN BERNARDINO COUNTY NOISE STANDARDS BY LAND USE CATEGORY, STATIONARY NOISE SOURCES

Affected Land Uses (Receiving Noise)	Daytime Leq (7 am- 10 pm)	Nighttime Leq (10 pm- 7 am)
Residential	55 dBA	45 dBA
Professional Services	55 dBA	55 dBA
Other Commercial	60 dBA	60 dBA
Industrial	70 dBA	70 dBA

Leq = (Equivalent Energy Level). The sound level corresponding to a steady-state sound level containing the same total energy as a time varying signal over a given sample period, typically 1, 8 or 24 hours.
dB(A) = (A-weighted Sound Pressure Level). The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear.
Ldn = (Day-Night Noise Level). The average equivalent A-weighted sound level during a 24-hour day obtained by adding 10 decibels to the hourly noise levels measured during the night (from 10 pm to 7 am). In this way Ldn takes into account the lower tolerance of people for noise during nighttime periods.

SOURCE: County of San Bernardino Development Code 83.01.080, Noise.

Exempt noise. The following sources of noise shall be exempt from the regulations of this Section:

- Motor vehicles not under the control of the commercial or industrial use.
- Emergency equipment, vehicles, and devices.
- Temporary construction, maintenance, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

City of Yucaipa General Plan

Table 3.9-2 identifies the City of Yucaipa noise standards for stationary noise sources at residential land uses and other sensitive receptors. Construction sites are considered temporary stationary noise sources due to operation of relatively stationary construction vehicles and equipment within a defined construction zone.

TABLE 3.9-2
CITY OF YUCAIPA HOURLY NOISE LEVEL PERFORMANCE STANDARDS STATIONARY AND OTHER LOCALLY-REGULATED SOURCES[a]

	7 a.m. to 10 p.m.		10 p.m. to 7 a.m.	
Land Use Category	Leq	Lmax	Leq	Lmax
Residential or other noise sensitive receivers	55 dBA	75 dBA	45 dBA	65 dBA

[a] Noise sources, which are not preempted from local noise control, including vehicles, operated on public roadways and aircraft in flight

SOURCE: City of Yucaipa General Plan

City of Yucaipa Development Code 87.0905 – Noise

Section 87.0905(b)(1) of the City of Yucaipa Development Codes sets the noise standards for emanations from any source as it affects adjacent properties. **Table 3.9-3** shows the noise standards for residential and other land uses.

TABLE 3.9-3
CITY OF YUCAIPA NOISE ORDINANCE STANDARDS BY LAND USE, ALL SOURCES (MOBILE AND STATIONARY)

Affected Land Uses (Receiving Noise)	Time Period	Noise Level (Ldn)
Residential	7am to 10pm 10pm to 7am	55 dBA 55 dBA
Professional Services	Anytime	55 dBA
Other Commercial	Anytime	60 dBA
Industrial	Anytime	70 dBA

dB(A) = (A-weighted Sound Pressure Level). The sound pressure level, in decibels, as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound, placing greater emphasis on those frequencies within the sensitivity range of the human ear.
Ldn = (Day-Night Noise Level). The average equivalent A-weighted sound level during a 24-hour day obtained by adding 10 decibels to the hourly noise levels measured during the night (from 10 pm to 7 am). In this way Ldn takes into account the lower tolerance of people for noise during nighttime periods.

SOURCE: City of Yucaipa Development Code, Section 87.0905, Noise.

The ordinance provides that no person shall operate or cause to be operated any source of sound at any location or allow the creation of any noise or property owned, leased, occupied, or otherwise controlled by such person which causes the noise level, when measured on any other property, either incorporated or unincorporated, to exceed any of the following levels:

a. The noise standard for that receiving land use for a cumulative period of more than 30 minutes in any hour
b. The noise standard plus 5 dBA for a cumulative period of more than five minutes in any hour
c. The noise standard plus 10 dBA for a cumulative period of more than five minutes in any hour
d. The noise standard plus 15 dBA for a cumulative period of more than one minute in any hour
e. The noise standard plus 20 dBA for any period of time

Section 87.0905(e)(1) of the City of Yucaipa Development Code exempts the following noise from regulation under the code:

- Motor vehicles not under the control of industrial use.
- Emergency equipment, vehicles, and devices.
- Temporary construction, repair, or demolition activities between 7:00 a.m. and 7:00 p.m., except Sundays and Federal holidays.

3.9.2 Environmental Setting

Sound and Noise Principles and Descriptors

Noise is defined as unwanted sound. Pressure waves traveling through air exert a force registered by the human ear as sound. The exertion of sound pressure waves as experienced by the human ear is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

The typical human ear is not equally sensitive to all frequencies of the sound spectrum. The method used to assess impacts from noise relies on measuring only those frequencies of sound that are audible by the human ear. This method of measuring sound is referred to as "A-Weighting." A-weighting is expressed in units of A-weighted decibels (dBA). Some representative noise sources and their corresponding A-weighted noise levels are shown in **Figure 3.9-2**.

Noise Exposure and Community Noise

An individual's noise exposure is a measure of unwanted sound exposure over a period of time. The noise levels presented in Figure 3.9-2 represent sound measurements at a given instant in time. In contrast, community noise is primarily the product of many distant noise sources, which constitute a relatively stable background noise exposure, with the individual contributors unidentifiable. The background noise level changes throughout a typical day, but does so gradually, corresponding with the addition and subtraction of distant noise sources such as traffic and atmospheric conditions. To accurately characterize the community noise environment, noise levels must be measured for an extended period of time. The time-varying characteristic of community noise is described using statistical noise descriptors. The most frequently used noise descriptors are summarized below:

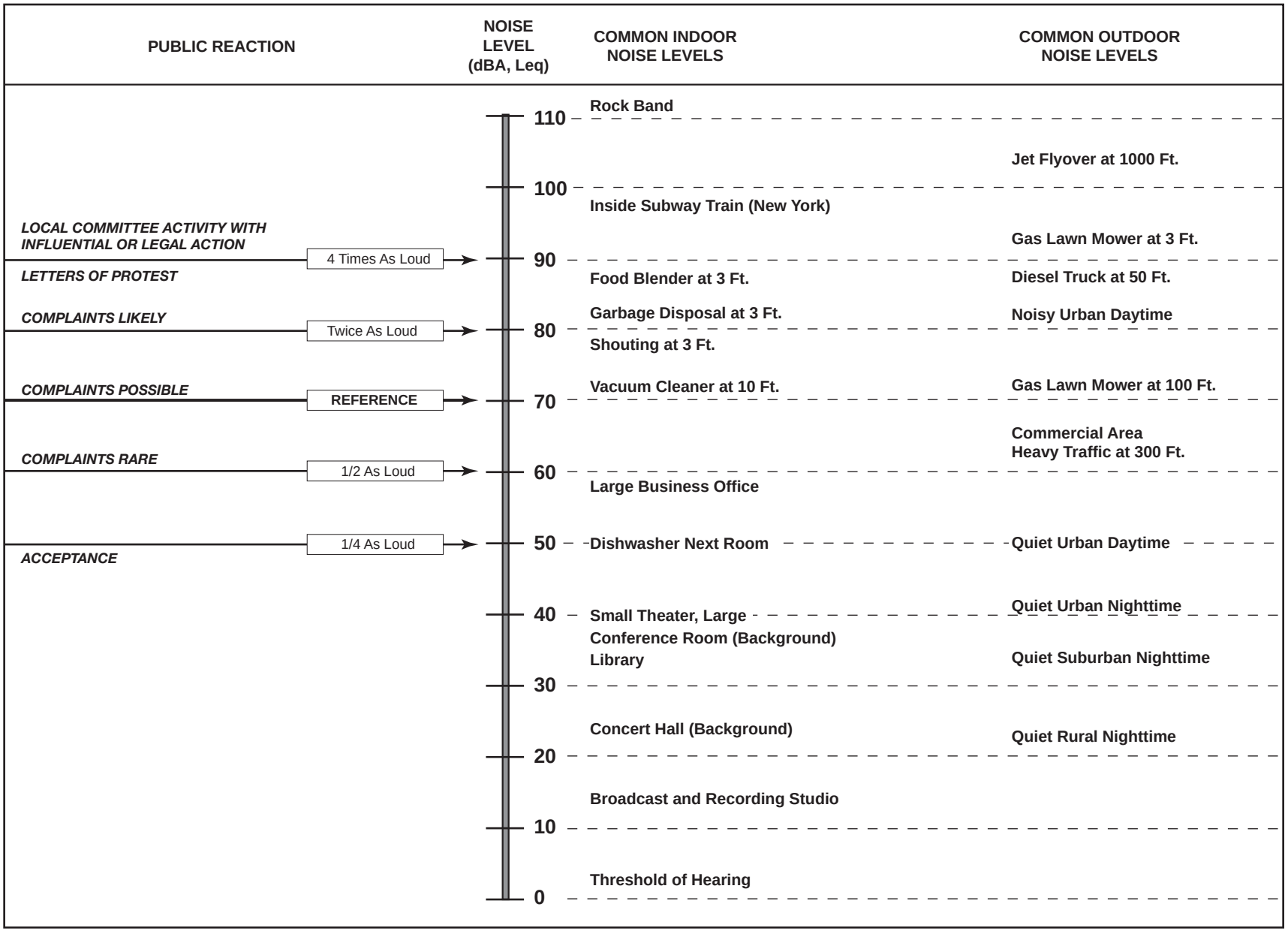
L_{eq}: the equivalent sound level is used to describe noise over a specified period of time, typically one hour, in terms of a single numerical value. The L_{eq} is the constant sound level which would contain the same acoustic energy as the varying sound level, during the same time period (i.e., the average noise exposure level for the given time period).

L_{max}: the instantaneous maximum noise level for a specified period of time.

L50: the noise level that is equaled or exceeded 50 percent of the specified time period. The L50 represents the median sound level.

L90: the noise level that is equaled or exceeded 90 percent of the specified time period. The L90 is sometimes used to represent the background sound level.

DNL: 24-hour day and night A-weighted noise exposure level which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night ("penalizing" nighttime noises). Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance of nighttime noises.



SOURCE: Caltrans Transportation Laboratory Noise Manual, 1982; and modification by ESA

DWR - Crafton Reservoir . 206008.04

Figure 3.9-2
Effects of Noise on People

CNEL: similar to the DNL the Community Noise Equivalent Level (CNEL) adds a 5-dBA "penalty" for the evening hours between 7:00 p.m. and 10:00 p.m. in addition to a 10-dBA penalty between the hours of 10:00 p.m. and 7:00 a.m.

As a general rule, in areas where the community noise environment is dominated by traffic, the L_{eq} during the peak-hour is generally equivalent to the DNL at that location (Caltrans, 1998).

Effects of Noise on People

The effects of noise on people can be placed into three categories:

- subjective effects of annoyance, nuisance, dissatisfaction;
- interference with activities such as speech, sleep, learning; and
- physiological effects such as hearing loss or sudden startling.

Community noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists, and different tolerances to noise tend to develop based on an individual's past experiences with noise.

One way to predict human reactions to a new noise is to compare the noise to the existing ambient noise levels to which an individual is adapted or conditioned. In general, the more a new noise exceeds the otherwise existing ambient noise level, the less acceptable the new noise will be judged by those hearing it. With regard to increases in A-weighted noise level, the following relationships occur:

- except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived;
- outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- a change in level of at least 5 dBA is required before any noticeable change in human response would be expected; and
- a 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause adverse response.

These relationships occur in part because of the logarithmic nature of sound and the decibel system. The human ear detects sound in a non-linear fashion. Accordingly, the decibel scale is based on a logarithmic scale such that two noise sources do not combine in a simple additive fashion. For example, if two identical noise sources each produce noise levels of 50 dBA, the combined sound level would be 53 dBA, not 100 dBA.

Noise Attenuation

Noise from stationary point sources, including stationary mobile sources such as idling vehicles (e.g. construction vehicles), attenuate (lessen) at a rate between 6 dBA for hard sites and 7.5 dBA for soft sites for each doubling of distance from the reference measurement. Hard sites are those with a reflective surface between the source and the receiver such as parking lots or smooth

bodies of water. No excess ground attenuation is assumed for hard sites and the changes in noise levels with distance (drop-off rate) is simply the geometric spreading of the noise from the source. Soft sites have an absorptive ground surface such as soft dirt, grass or scattered bushes and trees. In addition to geometric spreading, an excess ground attenuation value of 1.5 dBA (per doubling distance) is normally assumed for soft sites. Line sources (such at traffic noise from vehicles) attenuate at a rate between 3 dBA for hard sites and 4.5 dBA for soft sites for each doubling of distance from the reference measurement (Caltrans, 1998).

Fundamentals of Vibration

As described in the Federal Transit Administration's (FTA) Transit Noise and Vibration Impact Assessment (FTA, 2006), ground-borne vibration can be a serious concern for nearby neighbors of a transit system route or maintenance facility, causing buildings to shake and rumbling sounds to be heard. In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of ground-borne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment.

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings. The root mean square (RMS) amplitude is most frequently used to describe the affect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The decibel notation acts to compress the range of numbers required to describe vibration. Typically, ground-borne vibration generated by man-made activities attenuates rapidly with distance from the source of the vibration. Sensitive receptors for vibration include structures (especially older masonry structures), people (especially residents, the elderly and sick), and vibration sensitive equipment.

The effects of ground-borne vibration include movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. Building damage is not a factor for most projects, with the occasional exception of blasting and pile-driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by only a small margin. A vibration level that causes annoyance will be well below the damage threshold for normal buildings. The FTA measure of the threshold of architectural damage for conventional sensitive structures is 0.2 in/sec PPV and the FTA threshold of human annoyance to ground-borne vibration is 80 RMS (FTA, 2006).

Vibration propagates according to the following expression, based on point sources with normal propagation conditions:

$$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$$

Where PPV (equip) is the peak particle velocity in in/sec of the equipment adjusted for distance, PPV (ref) is the reference vibration level in in/sec at 25 feet, and D is the distance from the equipment to the receiver. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration and is often used in monitoring of vibration because it is related to the stresses experienced by structures.

In order to determine potential for annoyance, the RMS vibration level (Lv) at any distance (D) can be estimated based on the following equation:

$$Lv(D) = Lv(25\ ft) - 30\log(D/25)$$

Project Area Setting

The noise environment in the proposed project area is influenced primarily by traffic on local roadways and aircraft. Noise levels away from these mobile noise sources can be quite low depending on the land use and amount of nearby human activity. Noise from roadway traffic is considered a mobile sources that is regulated at federal and state levels through controls on truck and car manufacturers.

Sensitive Receptors

Some land uses are considered more sensitive to ambient noise levels than others because of the amount of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities typically involved. Residences, hotels, schools, rest homes, and hospitals are generally more sensitive to noise than commercial and industrial land uses. The closest sensitive receptors are residential neighborhoods located within 500 feet southeast of the existing Crafton Hills Reservoir, approximately 200 feet south of the proposed spoils area, and approximately 200 feet east of the proposed maintenance road. The closest residential land uses to the proposed connector pipeline are approximately 1,150 feet southeast of the intersection of SR-38 and Bryant Street. A new residential development is currently under construction within 50 feet of the proposed pipeline corridor and reservoir access road, on the south frontage of Mill Creek Road. The locations of nearby residential areas are shown in Figure 3.2-1 in Chapter 3.2.

3.9.3 Impact Assessment

The proposed project's potential impacts were assessed using the *CEQA Guidelines* Appendix G Checklist and the thresholds established by the Federal Interagency Committee on Noise (FICON) for increases in ambient noise levels. The following sections discuss the key issue areas identified in the *CEQA Guidelines* with respect to the proposed project's potential effect to the noise environment. Significance thresholds are identified and a significance conclusion is made following the discussion.

Noise Standards and Temporary Noise Increase

This section discusses the following CEQA Checklist questions:

Would the project result in exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Would the project result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Significance Threshold

The proposed project would result in a significant impact if construction activity would occur outside of the daytime hours permitted by the city's noise ordinance and if the resulting off-site noise level exceeds 55 dBA Leq in the daytime (7:00 a.m. to 10:00 p.m.) or 45 dBA Leq in the nighttime (10:00 pm to 7:00 a.m.) at the property line of residential or other noise sensitive land uses.

Impacts Analysis

Construction activity noise levels at and near the construction areas would fluctuate depending on the particular type, number, and duration of uses of various pieces of construction equipment. Construction-related material haul trips would raise ambient noise levels along haul routes, depending on the number of haul trips made and types of vehicles used. In addition, certain types of construction equipment generate impulsive noises (such as pile driving), which can cause particular annoyance. It is expected that pile driving is not required for the proposed project; however, percussive soil compaction may be necessary. **Table 3.9-4** shows typical noise levels for different construction stages. **Table 3.9-5** shows typical noise levels produced by various types of construction equipment.

TABLE 3.9-4
TYPICAL CONSTRUCTION NOISE LEVELS

Construction Phase	Noise Level (dBA, Leq) [a]
Ground Clearing	84
Excavation	89
Foundations	78
Erection	85
Finishing	89

a Average noise levels correspond to a distance of 50 feet from the noisiest piece of equipment associated with a given phase of construction and 200 feet from the rest of the equipment associated with that phase.

SOURCE: U.S. Environmental Protection Agency, Noise from Construction Equipment and Operations, Building Equipment, and Home Appliances, 1971.

Construction of the proposed project would generate a significant amount of noise corresponding to the appropriate phase of construction and the noise generating equipment used during those phases. The closest sensitive receptors would be those described in the setting section; other sensitive receptors in the study area vicinity would be exposed to construction noise at incrementally lower levels. Noise from construction activities generally attenuates at a rate of 4.5 to 7.5 dBA per doubling of distance. Construction noise at the nearest receptors is analyzed

TABLE 3.9-5
TYPICAL NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, Leq at 50 feet)
Dump Truck	88
Portable Air Compressor	81
Concrete Mixer (Truck)	85
Scraper	88
Jack Hammer	88
Dozer	87
Paver	89
Generator	76
Pile Driver	101
Backhoe	85

SOURCE: Cunniff, Environmental Noise Pollution, 1977.

below for each project component with an assumed attenuation rate of 6 dBA, because most of the loudest construction activities would attenuate at a rate similar to a point source.

Reservoir Enlargement Area

The reservoir enlargement area lies approximately 500 feet northwest of sensitive receptors. For construction occurring 500 feet from noise-sensitive land uses, the sensitive receptors would be exposed to approximately 69 dBA Leq during excavation, the loudest of construction activities that would occur. Bulldozer operation in the spoil area and along the proposed maintenance road below the existing dam could be as close to a residence as 200 ft, which could expose residents to approximately 75 dBA Leq. Construction noise at these levels would exceed noise ordinance levels at these nearby sensitive receptor locations and would be significant without mitigation. Implementation of Mitigation Measures N-1, N-2, and N-3 would reduce noise exposure to sensitive receptors. However, construction activities would increase ambient noise levels in the local neighborhoods during the daytime for the duration of the construction period. This would be considered a significant and unavoidable impact of the project.

Connector Pipeline

The pipeline lies about 1,150 feet from sensitive receptors on Bryant Street. For construction occurring 1,150 feet from noise-sensitive land uses, the sensitive receptors would be exposed to approximately 62 dBA Leq during excavation, the loudest of construction activities that would occur. Construction noise at these levels would exceed noise ordinance levels and would be significant without mitigation. Implementation of Mitigation Measures N-1, N-2, and N-3 would reduce noise exposure to sensitive receptors. However, construction activities would increase ambient noise levels in the local neighborhoods during the daytime for the duration of the construction period. This would be considered a significant and unavoidable impact of the project.

Mitigation Measures

The following mitigation measures incorporate Mitigation Measures N-1, N-2, N-3, N-4, and N-5, which were included in the previous 1994 WIP EIR and 1998 EBX SEIR are applicable to the proposed project. Any modifications to the previous measures have been underlined.

Mitigation Measure N-1: DWR shall require construction contractors to minimize construction noise by implementing the following measures:

- **(Adapted from N-1)** During construction, the contractor shall outfit all equipment, fixed or mobile, with properly operating and maintained exhaust and intake mufflers, consistent with manufacturers' standards.
- Impact tools (e.g., jack hammers, pavement breakers, and rock drills) used for construction shall be hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used. External jackets on the tools themselves shall be used where feasible. Quieter procedures, such as use of drills rather than impact tools, shall be used whenever feasible.
- **(Adapted from N-2)** Stationary noise sources that could affect adjacent receptors shall be located as far from adjacent receptors as possible.

Mitigation Measure N-2 (Adapted from N-3 and N-4): DWR shall ensure that the construction contractor avoids noise sensitive hours as follows:

- Construction activities shall be limited to between 7:00 a.m. and 7:00 p.m., Monday through Saturday, and not permitted Sundays and federal holidays.
- Any construction activity anticipated to occur outside those hours shall be approved in writing by the appropriate local government agency prior to such construction.

Mitigation Measure N-3: DWR shall require construction contractors to minimize construction noise nuisance by implementing the following measures:

- Signs shall be posted at the construction sites that include permitted construction days and hours, a day and evening contact number for the job site, and a contact number in the event of problems.
- An on-site complaint and enforcement manager shall respond to and track complaints and questions related to noise.
- **(Adapted from N-5)** DWR construction contractors shall select haul routes which would minimize noise impacts to residential neighborhoods and other sensitive receptors. DWR construction contractors shall consult with local planning jurisdictions in order to determine and select the most feasible haul routes to minimize noise impacts in residential areas and in the vicinity of noise-sensitive receptors.

Significance Conclusion

Significant and unavoidable. Implementation of the above mitigation measures would minimize construction noise and reduce impacts. However, construction noise for the

duration of the construction period would be elevated from the existing ambient noise levels and would therefore be considered an unavoidable nuisance to the otherwise quiet neighborhoods in the project vicinity.

Vibration

This section discusses the following CEQA Checklist question:

> *Would the project result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?*

Significance Threshold

The proposed project would result in a significant impact if buildings would be exposed to the FTA building damage ground-borne vibration threshold level of 0.2 PPV or if sensitive individuals would be exposed to the FTA human annoyance response ground-borne vibration threshold level of 80 RMS.

Impacts Analysis

Table 3.9-6 shows typical vibration velocities for various types of construction vehicles and equipment that could be used for construction of the proposed project. As shown in Table 3.9-6, the greatest vibration velocity is associated with use of a large bulldozer, which generates vibration levels of up to 0.089 PPV or 87 RMS at a distance of 25 feet.

TABLE 3.9-6
VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Equipment Activity	PPV at 25 Feet (inches/second)[a]	RMS at 25 Feet (VDB)[b]
Large Bulldozer	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79

[a] Buildings can be exposed to ground-borne vibration levels of 0.2 PPV without experiencing structural damage.
[b] The human annoyance response level is 80 RMS.

SOURCE: Federal Transit Administration, Transit Noise and Vibration Impact Assessment, May 2006.

Reservoir Enlargement Area

The spoil area lies approximately 200 feet from a residence south of Lakeview Road, and the proposed maintenance road below the existing dam lies approximately 200 feet from residences on Tivoli Way. At a distance of approximately 200 feet from heavy equipment activity, sensitive receptors could experience vibration levels of approximately 0.004 PPV and 57 RMS. Vibration levels at these receptors would not exceed the potential building damage threshold of 0.2 PPV or the annoyance threshold of 80 RMS. Other sensitive receptors in the project vicinity would be

exposed to vibration levels at incrementally lower levels. This impact would be less than significant without mitigation.

Connector Pipeline

The nearest sensitive receptor to the pipeline would be approximately 1,150 feet from heavy equipment activity and could experience vibration levels of approximately 0.0003 PPV and 37 RMS. Vibration levels at these receptors would not exceed the potential building damage threshold of 0.2 PPV or the annoyance threshold of 80 RMS. Other sensitive receptors in the project vicinity would be exposed to vibration levels at incrementally lower levels. This impact would be less than significant without mitigation.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. Vibration levels at the nearest sensitive receptors would not exceed the potential building damage threshold of 0.2 PPV or the annoyance threshold of 80 RMS.

Permanent Noise Increase

This section discusses the following CEQA Checklist question:

Would the project result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Significance Threshold

Some guidance as to the significance of changes in ambient noise levels is provided by the 1992 findings of the FICON, which assessed the annoyance effects of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Annoyance is a summary measure of the general adverse reaction of people to noise that generates speech interference, sleep disturbance, or interference with the desire for a tranquil environment. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been asserted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the Ldn, as shown in **Table 3.9-7.**

The rationale for the Table 3.9-7 criteria is that, as ambient noise levels increase, a smaller increase in decibels can result in significant annoyance. At lower decibel levels (i.e., below 60), the decibel level can increase more without causing significant annoyance.

TABLE 3.9-7
MEASURES OF SUBSTANTIAL INCREASE FOR NOISE EXPOSURE

Ambient Noise Level Without Project (Ldn)	Significant Impact Assumed to Occur if the Project Increases Ambient Noise Levels By:
<60 dB	+ 5.0 dB or more
60-65 dB	+ 3.0 dB or more
>65 dB	+ 1.5 dB or more

SOURCE: FICON, 1992.

Impacts Analysis

Operation of the proposed project would affect existing ambient noise levels if operation or maintenance of any permanent project components generated noise. The only new permanent noise generated by the proposed project would be associated with vehicle trips for operation and maintenance of new facilities. Maintenance of the enlarged reservoir would be similar to existing conditions, occurring approximately once a week. Otherwise, the facility would be unmanned, as it is currently. There would be no new noise associated with operation or maintenance of the enlarged reservoir. The proposed connector pipeline would be located underground and would be serviced on an as-needed basis. Therefore, operation of the proposed project would have a negligible effect on the ambient noise environment and would be similar to existing conditions. Noise impacts would be a less than significant impact without mitigation.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. Reservoir and pipeline maintenance trips would have a negligible effect on the ambient noise environment along the roadway network.

Airport Noise

This section discusses the following CEQA Checklist questions:

For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport, would the project expose people residing or working in the project area to excessive noise levels?

For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Significance Threshold

A significant impact would result if the proposed project would expose people to annoying noise associated with either a private or public airport.

Impacts Analysis

The proposed project is located approximately five miles east of the Redlands Municipal Airport runway. There are no private airstrips within two miles of the project site that would affect the proposed project. There would be no impact associated with airport noise.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed project is not located within an airport land use plan or within the vicinity of a private airstrip.

3.9.4 Mitigation Measure Summary Table

Table 3.9-8 presents the impacts and mitigation summary for Noise.

TABLE 3.9-8
NOISE IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance After Mitigation
Noise Standards and Temporary Noise Increase: The proposed project would not exceed noise standards with implementation of mitigation measures but would raise ambient noise levels for the duration of project construction.	N-1, N-2, and N-3	Significant and unavoidable
Vibration: The proposed project would not result in damage or nuisance to neighboring properties or sensitive receptors from construction related activities.	None required	Less than significant
Permanent Noise Increase: The proposed project would not result in a permanent increase in ambient noise.	None required	Less than significant
Airport Noise: The proposed project would not expose sensitive receptors to airport noise.	None required	No impact

SOURCE: ESA, 2008

3.10 Transportation and Traffic

This chapter provides an overview of the regulatory framework, existing transportation and traffic system at the proposed project site and surrounding region, an analysis of potential impacts to the transportation system that would result from implementation of the proposed project, and identification of mitigation measures, as necessary.

3.10.1 Regulatory Framework

California Department of Transportation (Caltrans)

Caltrans manages interregional transportation, including management and construction of the California highway system. In addition, Caltrans is responsible for permitting and regulation of the use of state freeways and highways. The proposed project area includes State Route 38 (SR-38), State Route 30 (SR-30), and Interstate 10 (I-10), which fall under the jurisdiction of Caltrans District 8.

Caltrans' construction practices require temporary traffic control planning "during any time the normal function of a roadway is suspended" (FHWA, 2003). In addition, Caltrans requires that permits be obtained for transportation of oversized loads, certain materials, and for construction-related traffic disturbance. Caltrans regulations would apply to construction of the pipeline within and immediately adjacent to SR-38, as well as the transportation of construction equipment throughout the proposed project area (Caltrans, 2004).

San Bernardino County

The Circulation and Infrastructure Element of the San Bernardino County General Plan (County of San Bernardino, 2007) governs the design of the transportation system and public facilities in the county. The San Bernardino County General Plan transportation-related goals and policies pertain to long-term land use and transportation planning. While not applicable to the proposed project, this document does consider the long-term General Plan goals to maintain peak-hour traffic level-of-service standards on county and state roadways when evaluating traffic impacts during project construction.

The San Bernardino County Department of Public Works requires roadway encroachment permits to perform work within the public right-of-way.

San Bernardino County Congestion Management Program

The San Bernardino Associated Governments (SANBAG) is the designated Congestion Management Agency for San Bernardino County and as such has developed and adopted the San Bernardino County Congestion Management Program (CMP) (SANBAG, 2008). State law requires that level-of-service standards be established as part of the CMP planning process (California Government Code Section 65089(b)(1)(A)). Some of the goals of the CMP are to:

- Maintain or enhance the performance of the multimodal transportation system and minimize travel delay;
- Help to coordinate development and implementation of subregional transportation strategies across jurisdictional boundaries; and
- Anticipate the impacts of proposed new development on the multimodal transportation system, provide consistent procedures to identify and evaluate the effectiveness of mitigation measures, and provide for adequate funding of mitigations.

The CMP includes a System Level of Service Element that defines the CMP roadway network, designates the level of service (LOS) standards for the network, and identifies the procedures to calculate the LOS. The CMP LOS standards are the minimum required by California Government Code Section 65089(b)(1)(B), which are LOS E for all segments/intersections except for certain circumstances where LOS F is designated. There are no roadways designated as LOS F in the project area. Road segments in Yucaipa that are included in the CMP do not exceed the LOS D standard and are therefore in compliance with the CMP requirements. The CMP does not apply to construction projects.

3.10.2 Setting

Level of Service

Level of service (LOS) measures the quality of service provided by a roadway and is used to correlate quantitative traffic-volume data to qualitative descriptions of traffic performance at intersections. LOS criteria for roadways account for numerous variables, including annual average daily traffic, roadway capacity, grade, and environment (urban versus rural). **Table 3.10-1** gives LOS categories "A" through "F" for intersections and highway capacity as defined by the Transportation Research Board (TRB, 2000). In San Bernardino County, county-maintained roads must achieve at least LOS E (SANBAG, 2003). The California Department of Transportation (Caltrans) standard for State highways is LOS C-D in rural areas and LOS C-E in urban areas (Caltrans, 2001).

Regional Setting

I-10 and SR-30 provide regional access to the proposed project location. Local access is provided by roadways such as SR-38, Bryant Street, San Bernardino Avenue, Yucaipa Boulevard, Opal Avenue, Oak Glen Road, and Wabash Avenue. **Figure 3.10-1** depicts major roads in the project vicinity. Characteristics of these roadways are described below.

TABLE 3.10-1
LEVEL OF SERVICE DEFINITIONS

LOS Rating	Description	Signalized Intersections Delay (sec)	Highway Capacity Ratio
A	Free Flow. No approach phase is fully used by traffic and no vehicle waits longer than one red indication. Insignificant delays.	0-16	0.0-0.59
B	Stable Operation. An occasional approach phase is fully used. Many drivers begin to feel somewhat restricted within platoons of vehicles. Minimal delays.	16-22	0.6-0.69
C	Stable Operation. Major approach phase may become fully used. Most drivers feel somewhat restricted. Acceptable delays.	22-28	0.7-0.79
D	Approaching Unstable. Drivers may have to wait through more than one red signal cycle. Queues develop but dissipate rapidly, without excessive delays.	28-35	0.8-0.89
E	Unstable Operation. Volumes at or near capacity. Vehicles may wait through several signal cycles. Long queues form upstream from intersection. Significant delays.	35-40	0.9-0.99
F	Forced Flow. Represents jammed conditions. Intersection operates below capacity with several delays; may block upstream intersections.	greater than 40	N/A

SOURCE: TRB, 2000.

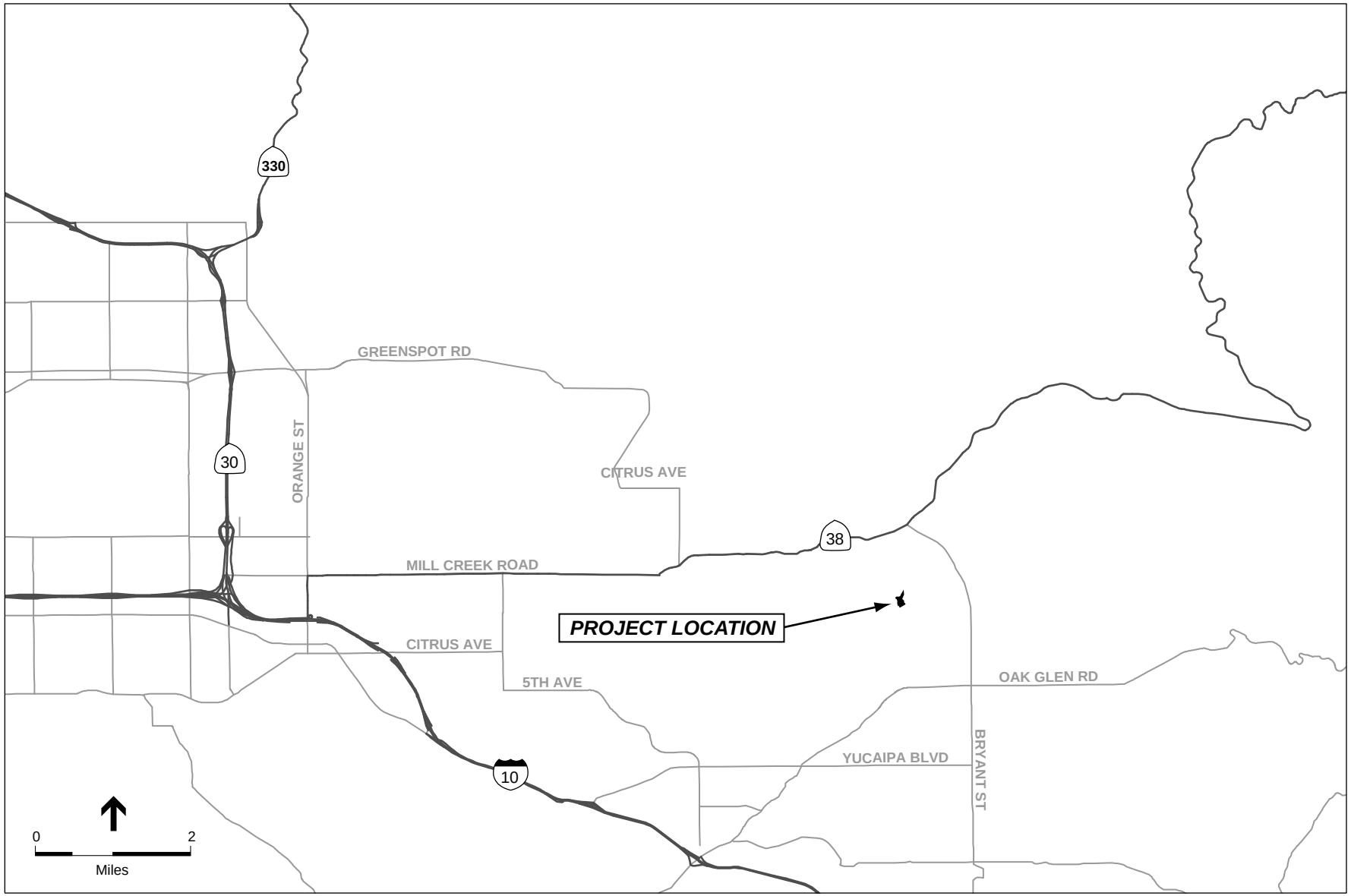
Interstate 10 (I-10) is the main throughway in western San Bernardino County and connects to other regional transportation facilities in the proposed project region, including I-15, I-215, and I-5. Freeway interchanges that provide access to the network of local roads are located at Tennessee Street / State Route 30, Ford Street, Wabash Avenue, SR-38 (Mill Creek Road), Yucaipa Boulevard, and Oak Glen Road, all to the south and west of the proposed project area. Average daily traffic volume on I-10 in the proposed project area ranges from 106,000 to 195,000 vehicles (Caltrans, 2007c). Trucks represent about 13 percent of the total daily traffic volume (Caltrans, 2007b). The LOS for I-10 in the project area varies from LOS B to D depending on direction of travel and time of day (SANBAG, 2003).

State Route 30 (SR-30) is a state highway that connects I-215 and I-10. The freeway interchange that provides access to the network of local roads is located at San Bernardino Avenue. Average daily traffic volume on SR-30 in the proposed project area ranges from 75,000 to 90,000 vehicles (Caltrans, 2007a). Trucks represent about six percent of the total daily traffic volume (Caltrans, 2007b). The LOS for SR-30 in the project area varies from LOS A to B depending on direction of travel and time of day (SANBAG, 2003).

Project Area Setting

Local Access Roadways

State Route 38 (SR-38) is a two-lane roadway connecting to SR-30 and running eastward through San Bernardino County. SR-38 is named Mentone Boulevard within the town of Mentone and has paved shoulders of substantial width. The posted speed limit is 50 mph. Beyond the town of Mentone, SR-38 becomes Mill Creek Road. Average daily traffic volume on SR-38 in the



SOURCE: Street Map USA, 2007; USGS, 2008.

DWR - Crafton Reservoir . 206008.04

Figure 3.10-1

Major Roads in Project Vicinity

proposed project area ranges between 5,600 to 20,000 vehicles (Caltrans, 2007a). Trucks represent about 9 percent of the total daily traffic volume (Caltrans, 2007a). The LOS for SR-38 in the project area is LOS D (SANBAG, 2003).

Bryant Street is a two-lane roadway running from SR-38/Mill Creek Road to its southern terminus at Green Tree Circle. South of Yucaipa Boulevard the roadway consists of two undivided lanes. Average daily traffic volume on Bryant Street in the proposed project area is about 7400 vehicles (County of San Bernardino, 2006). The LOS for Bryant Street between Yucaipa Boulevard and SR-38 is LOS B (SANBAG, 2003).

Oak Glen Road runs eastward through San Bernardino County from I-10. It provides access to the apple orchard tourist area east of Yucaipa that attracts approximately 1 million visitors a year. South of I-10, Oak Glen Road turns into Live Oak Canyon Road. East of Bryant Street, Oak Glen Road contains two undivided lanes and between Bryant Street and Yucaipa Boulevard it contains four undivided lanes. The San Bernardino County CMP does not designate a LOS standard for Oak Glen Road (SANBAG, 2003).

Yucaipa Boulevard is a two-way road that runs east-west through the City of Yucaipa from I-10 and terminates at Fremont Street. It has two lanes in each direction and a two-way left-turn utilization channel. It serves as a primary route between the City of Yucaipa and I-10. The LOS for Yucaipa Boulevard between I-10 and Oak Glen Road is LOS B (SANBAG, 2003).

Transit Service

Public transit service on roads in the project study area is provided by Omnitrans, which provides bus service in the San Bernardino Valley area. The nearest Omnitrans bus service is provided by Routes 8 and 9, which run on Mentone Boulevard/SR-38 west of Crafton Avenue, along Crafton Avenue between SR-38 and 5th Avenue, and on Yucaipa Boulevard west of Sand Canyon Road.

Bikeways

Bryant Street, Oak Glen Road, and Yucaipa Boulevard are all designated primary bike paths by the City of Yucaipa, as shown in Figure 3.8-4 of Chapter 3.8 Land Use and Recreation. Mill Creek Road is designated as a proposed bikeway by the San Bernardino Associated Governments.

3.10.3 Impact Assessment

Operation of the proposed project would affect traffic conditions if operation or maintenance of any permanent project components required additional vehicle trips to operate or service new facilities. Maintenance of the enlarged reservoir would be similar to existing conditions, requiring an on-site service trip approximately once a week. Otherwise, the facility would be unmanned, as it is currently; therefore, no vehicle trips would be required for operation of the enlarged reservoir. The proposed connector pipeline would be located underground and would be serviced on an as-needed basis. Therefore, operation of the proposed project would have no additional effect on local roadways. The following impact assessment focuses on the construction phase of the proposed project and the associated effects on traffic.

Construction Traffic

This section discusses the following CEQA Checklist question:

> *Would the proposed project cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?*

Significance Threshold

The proposed project would have a significant impact if it resulted in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on area roadways, or congestion at intersections.

Impact Analysis

As stated in Chapter 2, Project Description, construction of the proposed project would affect traffic on regional and local roadways due to construction worker vehicle trips and truck trips for material hauling. Construction-related traffic would last for six to 18 months, and therefore would not result in any permanent degradation in operating conditions or LOS on any local roadways. The primary off-site impacts from the movement of construction-related vehicles, primarily material hauling trucks, would include the lessening of roadway capacities due to slower movements and larger turning radii of trucks compared to passenger vehicles.

The construction scenarios described herein have been developed to allow general assessment of the nature and magnitude of potential construction impacts. The final construction schedule and construction characteristics, such as excavation quantities or estimated truck trips, may vary somewhat from those presented here.

Crafton Hills Reservoir Enlargement

The existing Crafton Hills Reservoir is located southwest of the intersection of Mill Creek Road (SR-38) and Bryant Street. Construction-related traffic could use I-10, SR-30, and SR-38. Construction vehicles would use SR-38 and the existing reservoir access road to access the reservoir enlargement area from the north. No access would be provided from the south. Currently, the existing reservoir access road is publicly-accessible to foot traffic and connects the neighborhood to the east of the existing reservoir to Mill Creek Road. During construction of the reservoir enlargement, this access road would be closed to the public in the interest of public safety. This would be a less-than-significant impact, however, because the roadway is not a primary route for ingress/egress to/from this neighborhood. The primary access road to this neighborhood is Bryant Street.

Construction activities related to the reservoir enlargement would generate vehicle trips due to construction workers' commutes and trucks transporting equipment and material to the site. The construction crew would number approximately 30 workers, and construction worker trips over a period of 12 to 18 months are not anticipated to exceed 30 round trips (60 one-way trips) per day. It is anticipated that construction equipment and material would be delivered to/from the reservoir

enlargement site throughout the construction period. Deliveries would require an additional 10 to 20 round-trip truck trips per day on average. All staging areas for the reservoir enlargement would be located within the Crafton Hills and would provide adequate storage and parking for all construction-related materials and vehicles (Mitigation Measure TR-3). On a daily basis, during construction of the reservoir enlargement, construction activities would result in 60 additional one-way vehicle trips due to construction worker commutes. On average, 20 to 40 additional one-way vehicle trips per day would be required for material hauling and delivery. This would result in an increase in the traffic load on local and regional roadways of up to 100 additional vehicle trips on a given day. Relative to average daily traffic volumes on roadways in the project area (as described previously in Section 3.10.2), this increase in vehicle trips would range from an increase of 1.7% and 1.3% of daily vehicles on SR-38 and Bryant Street, respectively (100 additional vehicles/5,600 existing vehicles; 100 additional vehicles/7,400 existing vehicles) to an increase of 0.05% of daily vehicles on I-10 (100 additional vehicles/195,000 existing vehicles). These increases would not be substantial in relation to the existing traffic load and capacity of the street system.

Haul truck traffic would affect traffic flow on local access roads (e.g., Mill Creek Road and Bryant Street) due to the slower movements and larger turning radii of the trucks compared to passenger vehicles. Construction-related truck traffic occurring on weekdays during the hours of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. would coincide with peak-period traffic volumes on area roadways, and therefore, would have the greatest potential to impede traffic flow. Implementation of Mitigation Measure TR-1, as described below, would ensure that the construction contractor implements a Traffic Control Plan to minimize the effects of construction-related traffic on roadway service standards, including avoiding peak travel periods when considering partial road or lane closures. Therefore, construction of the reservoir enlargement area would not significantly affect traffic flow on area roadways.

Pipeline Installation

The proposed pipeline would be installed north of and parallel to Mill Creek Road. Construction of the pipeline would primarily affect Mill Creek Road and Bryant Street (Figure 3.10-1). Pipeline construction would require daily ingress and egress of construction workers, equipment, and materials to and from the proposed project site for a duration of approximately six to 12 months. Pipeline construction would require one construction crew consisting of about 30 people. Construction worker trips traveling to and from the work site would not typically exceed 30 round trips (60 one-way trips) per day. Material deliveries would require an additional 20 one-way truck trips per day on average. The work sites would be accessed using I-10, SR-30, SR-38, and Bryant Street. Similar to the reservoir enlargement, on a daily basis, during construction of the proposed pipeline, construction activities would result in 60 additional one-way vehicle trips due to construction worker commutes. On average, 20 additional one-way vehicle trips per day would be required for material hauling and delivery. This would result in an increase in the traffic load on local and regional roadways of up to 80 additional vehicle trips on a given day. Relative to average daily traffic volumes on roadways in the project area (as described previously in Section 3.10.2), the increase in vehicle trips would range from an increase of 1.4% and 1.1% of daily vehicles on SR-38 and Bryant Street, respectively (80 additional vehicles/5,600 existing

vehicles; 80 additional vehicles/7,400 existing vehicles) to an increase of 0.04% of daily vehicles on I-10 (80 additional vehicles/195,000 existing vehicles). These increases would not be substantial in relation to the existing traffic load and capacity of the street system.

The 48-inch diameter connector pipeline would be installed primarily using open trench techniques. Staging areas north and south of Mill Creek Road would be used as lay down areas during pipeline installation. The pipeline would be installed at an approximate rate of up to 120 feet per day. Construction of the pipeline across Mill Creek Road would directly affect traffic flow on this road, but a detour would be provided, as required by Mitigation Measure TR-1. As required by Mitigation Measure TR-2, DWR would be required to coordinate with Caltrans District 8 to obtain necessary road encroachment permits for construction across and within the right-of-way of Mill Creek Road (SR-38) and would be required to comply with all conditions of approval.

Excavated material would be temporarily stockpiled in a staging area within the construction corridor off of Mill Creek Road. Afterwards, the material would be used as backfill. Excess excavated material would be spread over the construction area. Approximately 300 cy of concrete and 400 cy of bedding would be imported for use as engineered backfill and road pavement. Imported materials would be delivered to stockpiles near the open trench or in the contractor's staging area (Mitigation Measure TR-3). Imported concrete would be delivered daily as needed.

The primary impacts from construction truck traffic would include lane closures due to open trench construction of the connector pipeline across Mill Creek Road and a reduction of roadway capacities on the two-lane roadways serving the construction sites, due to the slower movements and larger turning radii of the trucks compared to passenger vehicles. Construction-related truck traffic occurring on weekdays during the hours of 7:00 to 9:00 a.m. and 4:00 to 6:00 p.m. would coincide with peak-period traffic volumes on area roadways, and therefore, would have the greatest potential to impede traffic flow. Implementation of Mitigation Measure TR-1 would ensure that a circulation and detour plan is developed by the construction contractor as part of the Traffic Control Plan for the proposed project. In addition, the Traffic Control Plan would minimize the effects of construction-related traffic on roadway service standards by requiring the construction contractor to avoid peak travel periods when considering partial lane closures. As a result, impacts to traffic would be less than significant.

Mitigation Measures

The following mitigation measures incorporate Mitigation Measure LU-9, which was included in the previous 1994 WIP EIR and 1998 EBX SEIR and is applicable to the proposed project. Any modifications to previous measures have been underlined.

> **TR-1:** Prior to construction, DWR shall require the contractor to prepare a Traffic Control Plan in accordance with professional engineering standards and the guidelines for safety and traffic provided in the Caltrans Construction Manual (revised 2008). The Traffic Control Plan would include, but not be limited to, the following requirements:
>
> - Maintain access for local land uses including residential driveways, commercial properties, and agricultural lands during construction activities.

- Maintain emergency services access to local land uses at all times for the duration of construction activities. Local emergency service providers shall be informed of lane/road closures and detours.
- Develop circulation and detour plans to minimize impact to local street circulation, including bikeways. This may include the use of signing and flagging to guide vehicles and cyclists through and/or around the construction zone. This may also include development of turning lanes for trucks delivering material and equipment to construction sites.
- Avoid peak travel periods when considering partial road or lane closures.
- Post advanced warning of construction activities to allow motorists to select alternative routes in advance.
- Post signs signaling for the presence of slow-moving or slow-turning vehicles in the vicinity of construction area, as necessary.
- Arrange for a telephone resource to address public questions and complaints during project construction.
- Compliance with roadside safety protocols, so as to reduce the risk of accident.

TR-2 (Adapted from LU-9): DWR shall coordinate the design of the connector pipeline with Caltrans District 8 and obtain the necessary road encroachment permits prior to construction. DWR shall comply with the applicable conditions of approval. Road encroachment permits will be necessary for construction within Mill Creek Road (SR-38).

TR-3: DWR shall provide staging areas for excavated material within the construction zone or at locations accessible by construction roads.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measures TR-1 through TR-3 would reduce the impacts to traffic flow on area roadways due to project construction.

Effects to Level of Service Standard

This section discusses the following CEQA Checklist question:

Would the project exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?

Significance Threshold

The proposed project would have a significant impact if it exceeded the LOS standard established by San Bernardino County.

Impact Analysis

LOS standards for roadways that are part of the San Bernardino County CMP network are intended to regulate long-term traffic increases resulting from the operation of new development, and do not apply to temporary construction projects. Since the excavated soils would be stockpiled and disposed of within the dam and spoils area, there would not be the need to haul material from the site. Deliveries of materials, equipment, and workers, would affect daily traffic volumes as described above. The maximum increase in daily vehicle trips would be 100 trips or 1.7% of average daily trips on SR-38. The CMP identifies the LOS on SR-38 as LOS D, which is above the CMP minimum requirement of LOS E for all roadways in the network. An additional 100 vehicle trips on a given day on SR-38 could affect the LOS on SR-38. However, once construction is complete, the project would have no affect on local traffic. As such, the proposed project would not exceed LOS standards established by San Bernardino County CMP for designated roadways.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. Project construction could result in an increase in daily vehicle trips on roadways in the project area due to worker commutes and material hauling and delivery. However, LOS standards do not apply to construction projects. Therefore, the proposed project would not exceed the LOS standards established by the San Bernardino County CMP for roadways in the project area.

Effects to Air Traffic Patterns

This section discusses the following CEQA Checklist question:

Would the project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

Significance Threshold

The proposed project would have a significant impact if it resulted in a change in air traffic patterns.

Impacts Analysis

The proposed project is located approximately five miles east of the Redlands Municipal Airport runway. There are no private airstrips within two miles of the proposed project site that would affect the proposed project. There would be no impact.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed project is not located within two miles of a private airstrip.

Effects on Parking

This section discusses the following CEQA Checklist question:

Would the project result in inadequate parking capacity?

Significance Threshold

The proposed project would have a significant impact if it resulted in substantial adverse effect on parking availability due to construction workers and construction related vehicles.

Impact Analysis

Proposed improvements would create temporary parking demand for construction workers and construction vehicles as crews move along the project corridor. Assuming each worker's daily commute is done alone, each crew would require up to about 30 parking spaces. Construction vehicle parking would occur in the vicinity of each active work area. Staging areas would be designed to accommodate parking for all construction workers and construction equipment, as required by Mitigation Measure TR-4, which was included in the previous 1998 EBX SEIR. The proposed project would not displace any existing parking spaces, and the impact would be less than significant.

Mitigation Measures

The following mitigation measure is included in the previous 1994 WIP EIR and1998 EBX SEIR as C-4 and is applicable to the proposed project. No additional mitigation measures are required. Any modifications to the previous measure have been underlined.

TR-4 (Adapted from C-4): Prior to the beginning of construction, all contractors shall submit <u>traffic</u> plans denoting employee parking locations and work staging areas to DWR. Potential parking and equipment storage areas may be on-site, <u>with construction easements</u> or parking in an established off-site staging area. No construction worker parking shall be allowed within the travel lanes of roads or highways.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measure TR-4 would require a parking plan to ensure adequate parking capacity.

Effects to Roadway Safety

This section discusses the following CEQA Checklist question:

Would construction activities substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Significance Threshold

The proposed project would have a significant impact if it resulted in a substantial increase in roadway hazards due to a design feature or incompatible uses.

Impact Analysis

Construction activities would affect a small portion of Mill Creek Road when the connector pipeline is installed across the road. These activities would introduce construction equipment and oversized vehicles in and around Mill Creek Road that would potentially increase hazards to passing motorists. Implementation of Mitigation Measure TR-1 requiring a Traffic Control Plan would minimize any hazards to motorists. Implementation of Mitigation Measure TR-2 would require DWR to obtain an encroachment permit prior to constructing the connector pipeline across Mill Creek Road. The remaining construction activities would take place off-road and would therefore not increase roadway hazards. Truck slowing and turning from SR-38 would affect traffic and could create traffic hazards. Mitigation Measure TR-1 would ensure that turning lanes and site access plans are implemented to minimize the project's potential for affecting traffic safety.

Mitigation Measures

Implement Mitigation Measures TR-1 and TR-2.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measures TR-1 and TR-2 would minimize hazards to motorists by requiring a Traffic Control Plan and an encroachment permit

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Effects on Emergency Access

This section discusses the following CEQA checklist Question:

Would the project result in inadequate emergency access?

Significance Thresholds

The proposed project would have a significant impact if it resulted in substantial adverse effect on emergency access due to road closures or detours.

Impact Analysis

As described above, the proposed pipeline would be installed primarily using open trench construction techniques. During this process, the trench would extend to an estimated width of 32 to 58 feet. Mill Creek Road will be subject to a traffic detour and temporary lane closures around

the construction area when the pipeline installation crosses the road. A complete closure of Mill Creek Road, however, is not anticipated as a result of this phase of construction. Per Mitigation Measure TR-1, DWR would require the construction contractor to prepare a Traffic Control Plan that would require emergency access to be maintained for the duration of construction activities. In addition, Mitigation Measure TR-5, which was included in the previous 1998 EBX SEIR would ensure local emergency service providers are informed of lane/road closures and detours.

Mitigation Measures

The following mitigation measure is included in the previous 1994 WIP EIR and 1998 EBX SEIR as C-3 and is applicable to the proposed project.

> **TR-5 (Previously C3):** DWR shall require that the construction contractor notifies the responsible law enforcement agencies and Fire Department two weeks prior to start of work as to when and where construction would begin and end, and shall coordinate their emergency access plans and procedures accordingly.
>
> Implement Mitigation Measure TR-1.

Significance Conclusion

> Less than significant with mitigation. Implementation of Mitigation Measures TR-1 and TR-5 would ensure that emergency access is maintained during construction and that responsible law enforcement agencies are notified of construction activities.

Effects on Alternative Transportation Plans

This section discusses the following CEQA checklist Question:

> *Would the project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycled racks)?*

Significance Thresholds

The proposed project would have a significant impact if it conflicted with adopted policies, plans, or programs supporting alternative transportation.

Impact Analysis

The San Bernardino County General Plan and the City of Yucaipa General Plan's alternative transportation-related goals and policies pertain to long-term land use and transportation planning. As project construction activities would last for approximately 18 to 24 months, long-term transportation policies and plans would not be affected. Construction of the connector pipeline in and around Mill Creek Road would not affect bus routes or bikeways as Mill Creek Road is not currently a designated bikeway and is not a segment of a bus route.

Mitigation Measures

None required.

Significance Conclusion

No impact. As project construction activities would be temporary, long-term transportation policies and plans would not be affected.

3.10.4 Mitigation Measure Summary Table

Table 3.10-2 presents the impacts and mitigation summary for Transportation and Traffic.

TABLE 3.10-2
TRANSPORTATION AND TRAFFIC IMPACTS AND MITIGIATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance After Mitigation
Construction Traffic: Construction activities for the proposed project would have a less than significant impact on roadway traffic with incorporation of mitigation measures.	TR-1 through TR-3	Less than significant
Level of Service Standard: The proposed project would not impact the LOS standard established by San Bernardino County.	None required	Less than significant
Effects to Air Traffic Patterns: The proposed project would not have an impact on air traffic patterns.	None required	No impact
Effects on Parking: Construction activities for the proposed project would have a less than significant impact on the demand for parking with incorporation of the mitigation measure.	TR-4	Less than significant
Effects to Public Roadway Safety: The proposed project would have a less than significant impact on roadway safety with incorporation of the mitigation measures.	TR-1 and TR-2	Less than significant
Effects to Emergency Access: The proposed project would have a less than significant impact on emergency access with incorporation of the mitigation measures.	TR-1and TR-5	Less than significant
Effects to Alternative Transportation Plans: The proposed project would have no impact on alternative transportation plans and policies.	None required	No impact

SOURCE: ESA, 2008

3.11 Utilities, Energy and Public Services

This chapter provides an overview of the regulatory framework, existing public service and utility setting, and analysis of potential impacts to the services that would result from implementation of the proposed project.

3.11.1 Regulatory Framework

State

Protection of Underground Infrastructure

The California Government Code Section 4216-4216.9 "Protection of Underground Infrastructure" requires an excavator to contact a regional notification center (e.g., Underground Services Alert or Dig Alert) at least two days prior to excavation of any subsurface installations. Any utility provider seeking to begin a project that could damage underground infrastructure can call Underground Service Alert, the regional notification center for southern California. Underground Service Alert will notify the utilities that may have buried lines within 1,000 feet of the project. Representatives of the utilities are then notified and are required to mark the specific location of their facilities within the work area prior to the start of project activities in the area.

2005 California Energy Action Plan II

The California Energy Action Plan II is the state's principal energy planning and policy document (California Energy Commission, 2005). The plan identifies state-wide energy goals, describes a coordinated implementation plan for state energy policies, and identifies specific action areas to ensure that California's energy is adequate, affordable, technologically advanced, and environmentally sound. In accordance with this plan, the first priority actions to address California's increasing energy demands are energy efficiency and demand response (i.e., reduction of customer energy usage during peak periods in order to address system reliability and support the best use of energy infrastructure). Additional priorities include the use of renewable sources of power and distributed generation (i.e., the use of relatively small power plants near or at centers of high demand). To the extent that these actions are unable to satisfy the increasing energy and capacity needs, clean and efficient fossil-fired generation is supported.

The Energy Action Plan II includes the following energy efficiency action specific to water supply systems:

> Identify opportunities and support programs to reduce electricity demand related to the water supply system during peak hours and opportunities to reduce the energy needed to operate water conveyance and treatment systems.

In 2002, California established its Renewable Portfolio Standard program,[1] with the goal of increasing the percentage of renewable energy in the state's electricity mix to 20 percent by 2017. The California Energy Commission subsequently accelerated that goal to 2010, and further recommended increasing the target to 33 percent by 2020. Because much of electricity demand growth is expected to be met by increases in natural-gas-fired generation, reducing consumption of electricity and diversifying electricity generation resources are significant elements of plans to reduce natural gas demand.

California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (Public Resources Code [PRC], Division 30), enacted through Assembly Bill (AB) 939 and modified by subsequent legislation, required all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of wastes by the year 2000 (PRC Section 41780). The state determines compliance with this mandate to "divert" 50 percent of generated waste (which includes both disposed and diverted waste) through a complex formula. This formula requires cities and counties to conduct empirical studies to establish a "base year" waste generation rate against which future diversion is measured.

3.11.2 Setting

This section describes the existing public utilities and services in the project area. Public utilities in the project area include water, wastewater, flood control, solid waste disposal, electricity, and natural gas conveyance facilities. Public services include schools, hospitals, police, and fire protection.

Regional Setting

Portions of the proposed connector pipeline corridor, reservoir enlargement, and associated elements would be constructed within the communities of Yucaipa, Redlands, and unincorporated San Bernardino County. The public services and utilities in the project area primarily are associated with the City of Yucaipa as described below.

Project Area Setting

Law Enforcement Services

Police services may be required at the construction site in the event of an emergency. The San Bernardino County Sheriff's Department (SBCSD) provides law enforcement services to the City of Yucaipa as well as other areas of San Bernardino County. By contractual agreement, the SBCSD provides 19 deputy sheriffs to the area to answer approximately 28,000 service calls

[1] The Renewable Portfolio Standard is a flexible, market-driven policy to ensure that the public benefits of wind, solar, biomass, and geothermal energy continue to be realized as electricity markets become more competitive. The policy ensures that a minimum amount of renewable energy is included in the portfolio of electricity resources serving a state or country. By increasing the required minimum amount over time, the Renewable Portfolio Standard puts the electricity industry on a path toward increasing sustainability.

annually. The County of San Bernardino Sheriff Station, located at 34282 Yucaipa Boulevard in Yucaipa, is approximately six miles south of Crafton Hills Pump Station.

Fire Protection

Fire protection and paramedic services are provided to the City of Yucaipa by the CDF. CDF responds to over 5,000 service calls each year. Emergency fire response is provided from two fire stations. Fire Station 1 is located at 11416 Bryant Street, approximately three miles from the Crafton Hills Reservoir. Fire Station 2 is located at 32664 Yucaipa Blvd, approximately six miles from the reservoir.

Public Schools

The following public schools are located within the City of Yucaipa and are part of the Yucaipa-Calimesa Joint Unified School District: Dunlap Elementary, Meadow Creek Elementary, Ridgeview Elementary, Wildwood Elementary, Park View Middle, and Yucaipa High School. The two schools in closest proximity to the proposed project, Park View Middle School and Ridgeview Elementary, are located 0.75 and 0.85 miles away, respectively.

Hospitals

Yucaipa Valley Hospital is located at 35253 Avenue H and is over four miles away from the reservoir. Redlands Community Hospital is located at 34675 Yucaipa Boulevard and is over two miles from the reservoir.

Water Facilities and Wastewater Collection

Water and wastewater services are provided to the Yucaipa area by the Yucaipa Valley Water District (YVWD). The YVWD service area includes the Cities of Yucaipa and Calimesa. YVWD's service area lies in both the SGPWA and the SBVMWD service areas. SBVMWD and SGPWA are the wholesale water agencies that deliver SWP water to the YVWD. The YVWD typically meets the bulk of its customer demand for water with groundwater pumped from the Yucaipa Groundwater Basin and the Beaumont Basin. YVWD is also able to receive water from the San Bernardino Basin via the East Branch extension of the SWP pipeline. The YVWD operates a wastewater treatment plant located at 880 West County Line Road, Calimesa. The YVWD's Municipal Wastewater Treatment Plant has a treatment capacity of approximately 4.5 million gallons of wastewater per day.

Storm Water

The City of Yucaipa is located within the Wilson Creek drainage basin, which contains two major drainage channels, Wilson Creek and Wildwood Creek. These two drainage basins flow into Live Oak Canyon at the western boundary of the city. Existing storm drain facilities in Yucaipa include channels in Yucaipa Creek, Live Oak Canyon, Wilson Creek, and Oak Glen Creek, as well as reservoirs at Yucaipa Lakes Regional Park, a flood control basin north of Oak Glen Road east of Bryant Street, and nearby spreading ground. The proposed project is located within the San Bernardino County Flood Control District's jurisdictional boundary.

Solid Waste Management

The two closest landfills to the proposed project site are the San Timoteo Sanitary Landfill and the California Street Landfill, both of which are located within the City of Redlands. The California Street Landfill is a municipal solid waste landfill owned and operated by the City of Redlands, Municipal Utilities Department. The San Timoteo Sanitary Landfill is owned and operated by the County of San Bernardino Solid Waste Management Division and accepts Class III wastes such as residential, demolition, commercial refuse, and decomposable inert solids. Both landfills accept green-waste.

Other Utilities

Electricity is provided to the community of Yucaipa by Southern California Edison (SCE) and natural gas services are provided by the Southern California Gas Company. Construction activities may require the use of electric powered construction equipment that would result in a temporary increase in demand on the power grid. Contractor field offices and electric power tools would place demands on local energy supplies.

Cable service to the City of Yucaipa is provided by Adelphia Cablevision and telephone services are provided by Verizon Communications.

3.11.3 Impact Assessment

The proposed project's potential impacts were assessed using the environmental checklist included in Appendix G of the *CEQA Guidelines*. The following sections discuss the key issue areas identified in the *CEQA Guidelines* with respect to the proposed project's potential effect to utilities, energy, and public services. Significance thresholds are identified and a significance conclusion is made following the discussion.

Local Public Services

This section discusses the following CEQA Checklist question:

> *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered government facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: Fire protection? Police protection? Schools? Parks? Other public facilities?*

Significance Threshold

The proposed project would have a significant impact if it resulted in substantial adverse effect on emergency services; emergency response plans or emergency evacuation plans; government services such as fire and police protection, schools, hospitals, or other public services or facilities. For the purpose of this analysis, a substantial adverse impact would result if service ratios, response times, and performance objectives would not be met after implementing the proposed project.

Impact Analysis

Construction of the pipeline alignment in or adjacent to Mill Creek Road could result in a detour around the construction area and could impair local fire, police, or other emergency access during this period. Operation of the new pipeline would increase local accident potential in the rare event of a pipeline rupture, which could result in flooding and disruption of roadway access. Such an event could temporarily increase demand for police and fire services as well as impair emergency access due to roadway disruption. However, the proposed project would not require the provision of new or additional public services. There would be no increases in demand for police, fire, or other emergency services associated with this project.

The proposed project would not result in substantial adverse impacts to any local schools, parks, hospitals, or other public facilities. The proposed project is not a community development project, such as a residential housing project, and would not result in a direct increase in population, which would result in impacts to these and other public facilities. There would be no impact.

Mitigation Measures

None required.

Significance Conclusion

No impact. There would be no increase in demand for police, fire, or other emergency services nor would the proposed project result in substantial adverse impacts to local schools, parks, hospitals, or other public facilities.

Public Utilities

This section discusses the following significance threshold question:

Would the project result in damage or disruption to public utility services?

Significance Threshold

The proposed project would have a significant impact if it resulted in substantial adverse effect on local utility services.

Impact Analysis

Utility services could be disrupted as a result of project construction. These utility conflicts could potentially occur at areas where project components would run parallel to and cross under or over, or be situated adjacent to these lines. In most cases, impacts to local utilities and services involve a temporary disruption that would not exceed one day. All utility lines and cables that would be disrupted during pipe installation would be identified during preliminary design. It is not anticipated that the proposed project would affect operations of the East Branch Extension pipeline or the Yucaipa Pipeline, except during the connection of the new alignment. This

temporary outage would be sustained for the minimum amount of time required to make the new connection.

Due to potential conflicts with utility lines in city streets, the proposed project could result in temporary disruption of utility services. In most cases, the impacts would occur only during project construction. With implementation of Mitigation Measures PU-1 and PU-2, impacts would be less than significant.

Mitigation Measures

The following mitigation measures incorporate Mitigation Measures U-2 and U-4, which were included in the previous 1994 WIP EIR and 1998 EBX SEIR and are applicable to the proposed project.

> **PU-1 (Previously U-2)**: DWR's construction contractor shall coordinate with all potentially affected utility companies and jurisdictions to determine the exact location of all underground utilities prior to doing any work or taking action which could damage such facilities or interfere with their operations. The construction contractor shall protect all existing utility lines and associated substructures from damage unless specifically noted on the plans. The construction contractor shall coordinate in advance any necessary planned utility service outages with the affected utility companies.
>
> **PU-2 (Previously U-4)**: All utilities that cross the pipeline trench shall be protected in place, unless otherwise indicated for relocation on the plans. DWR's construction contractor shall be required to notify the utility owner and Underground Service Alert (DigAlert) two (2) working days in advance of the construction crossing and coordinate the construction schedule with the utility service providers. Where indicated on the plans, the contractor shall provide appropriate means to support utilities which lie within excavated areas and which are not self-supporting.

Significance Conclusion

> Less than significant with mitigation. Implementation of Mitigation Measures PU-1 and PU-2 would reduce the chance of temporary disruption of utility services.

Solid Waste

This section discusses the following CEQA Checklist questions:

> *Would the project be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?*
>
> *Would the project comply with federal, state, and local statues and regulations related to solid waste?*

Significance Threshold

The proposed project would have a significant impact if it generated significant quantities of solid waste materials that could not be accommodated by local landfills. In addition, a significant impact would result if the proposed project did not comply with solid waste regulations.

Impact Analysis

As previously described, the proposed project would not generate excess material from excavation activities. DWR does not anticipate the need to dispose of excavated material in a landfill. All excavated materials from the reservoir enlargement area would be contained within the project site and stockpiled to be used as material for the proposed dam or spoiled downstream of the reservoir. Material excavated during pipeline construction would be temporarily stockpiled adjacent to the trench and then used as backfill. Any excess material would be spread over the construction area and oversized rocks may be reused or disposed offsite in an appropriate manner. In the event that there is excess native material, excess imported material, or excess concrete, all material would be reused offsite or disposed offsite in accordance with relevant waste disposal regulations.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed project would not generate excess material from excavation activities.

Water and Wastewater

This section discusses the following CEQA Checklist questions:

Would the project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Would the project require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Would the project have sufficient water supplies available to serve the project from existing entitlements and resources, or are new entitlements needed?

Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Significance Threshold

A significant project impact would result if existing public service systems could not adequately provide drinking water or wastewater treatment without the expansion of existing facilities.

Impact Analysis

The proposed project would not result in the construction of new water or wastewater treatment facilities or require the expansion of existing treatment facilities. The proposed project would expand the Crafton Hills Reservoir, increasing the impoundment capacity to 225 af. The water impounded at the new enlarged reservoir would continue to be delivered to customers. The reservoir enlargement would not increase the conveyance capacity of the East Branch Extension; but would substantially enhance the system's operating flexibility and reliability. Therefore, the proposed project would not require construction of additional water treatment facilities and would not require additional water supplies. There would be no impact.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed project would not result in the construction of new water or wastewater treatment facilities or require the expansion of existing treatment facilities.

Storm Water

This section discusses the following CEQA Checklist question:

Would the project require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Significance Threshold

The proposed project would have a significant impact if it resulted in the construction of new storm water drainage facilities that causes significant environmental effects.

Impact Analysis

The proposed project would not result in the construction of new storm water drainage facilities or require the expansion of existing facilities. As described in Chapter 3.7, Hydrology and Water Quality, the proposed reservoir enlargement would substantially alter the drainage pattern of the canyon, by means of inundation; however, this alteration would not result in an increase in surface water runoff which would cause flooding or erosion. The proposed reservoir enlargement and dam construction would not result in runoff that would exceed the capacity of local storm drains. There would be no impact.

Mitigation Measures

None required.

Significance Conclusion

No impact. The proposed project would not require construction of new storm water drainage facilities.

Energy Demand

This section discusses the following significance threshold question:

Would the project cause wasteful, inefficient or unnecessary consumption of energy?

Would the project result in a substantial increase in overall per capita energy consumption?

Would the project require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity the construction of which could cause significant environmental effects?

Would the project conflict with applicable energy efficient policies or standards?

Significance Threshold

The proposed project would have a significant impact if it resulted in wasteful consumption of energy or required more electricity than the local system could provide.

Impact Analysis

The proposed project is not anticipated to result in a long term increase in energy consumption. Enlargement of the Crafton Hills Reservoir would allow DWR to run the pumps at the Crafton Hills Pump Station during off-peak periods of the day, relieving pressure on the electrical grid system. This is consistent with the California Energy Action Plan II goal that favors the use of off-peak power for water conveyance (see Section 3.10.1.1). Table 3.11-1 provides energy usage estimates for the Crafton Hills Pump Station during previous years. As shown below, the annual energy usage varies greatly depending on the availability and demand for water. Actual future energy consumption would be similarly variable. The current energy supplied to the Crafton Hills Pump Station by SCE would also efficiently sustain energy demands under the proposed upgrades.

Construction activities related to the proposed project would require connections into existing power sources. During these power connection periods, a slight increase in short-term electricity demand would result. However, long-term electricity demand would be unaffected by construction activities. The impact would be less than significant.

Mitigation Measures

None required.

Significance Conclusion

Less than significant. Long-term electricity demand would be unaffected by construction activities or operation of the proposed project.

TABLE 3.11-1
ESTIMATED PAST ENERGY USE OF THE CRAFTON HILLS PUMP STATION
(megawatt hours)

	Jan	Feb	March	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2004	219.22	336.69	85.10	394.40	357.12	241.67	248.67	251.71	274.23	201.94	115.82	130.36
2005	37.00	47.00	74.00	163.00	178.00	269.00	249.00	269.00	329.00	329.00	275.00	229.00
2006	177.59	207.06	234.63	187.72	334.20	286.24	264.35	429.54	859.07	1005.70	966.98	925.21
2007	189.00	171.00	189.00	183.00	189.00	183.00	189.00	189.00	N/A	N/A	N/A	N/A

SOURCE: DWR, 2007

3.11.4 Mitigation Measure Summary Table

Table 3.11-2 presents the impacts and mitigation summary for Utilities, Energy and Public Services.

TABLE 3.11-2
UTILITIES, ENERGY, AND PUBLIC SERVICES IMPACTS AND MITIGATION SUMMARY

Proposed Project Impact	Mitigation Measure	Significance After Mitigation
Local Public Services: The proposed project would no impact on demand for local public services.	None required	No impact
Public Utilities: The proposed project would have a less than significant impact on disruption to public utilities with incorporation of the mitigation measures.	PU-1 and PU-2	Less than significant
Solid Waste: The proposed project would have no impact on solid waste and landfill capacity.	None required	No impact
Water and Wastewater: The proposed project would not impact water or wastewater treatment capacity or require new water entitlements.	None required	No impact
Storm Water: The proposed project would not impact storm water drainage and treatment facilities.	None required	No impact
Energy Demand: The proposed project would have a less than significant impact on energy consumption.	None required	Less than significant

SOURCE: ESA, 2008

CHAPTER 4
Cumulative Impacts

4.1 CEQA Analysis Requirements

A cumulative impact refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The *CEQA Guidelines* require that EIRs discuss the cumulative impacts of a project when the project's incremental effect is "cumulatively considerable," meaning that the project's incremental effects are considerable when viewed in connection with the effects of past, current, and probable future projects.[1] According to *CEQA Guidelines* §15130(a) and (b), the purpose of this section is to provide a discussion of significant cumulative impacts which reflects "the severity of the impacts and their likelihood of occurrence." The *CEQA Guidelines* indicate that the discussion of cumulative impacts should include:

- Either: (A), a list of past, present, and probable future projects producing related or cumulative impacts; or (B), a summary of projections contained in an adopted general plan or similar document, or in an adopted or certified environmental document, which described or evaluated conditions contributing to a cumulative impact;
- A discussion of the geographic scope of the area affected by the cumulative effect;
- A summary of expected environmental effects to be produced by these projects; and,
- Reasonable, feasible options for mitigating or avoiding the project's contribution to any significant cumulative effects.

The analysis of cumulative effects in this chapter focuses on the effects of concurrent construction and operation of the proposed project with other spatially and temporally proximate projects. As such, this cumulative analysis relies on a list of related projects that have the potential to contribute to cumulative impacts in the project area.

4.2 Related Projects

This analysis considers the impacts of the proposed Crafton Hills Reservoir Enlargement Project in combination with potential environmental affects of other related projects in the project area. "Related projects," also referred to as "cumulative projects," include recently completed projects, projects currently under construction, and future projects currently in development. The potential for related projects to have cumulative environmental impacts depends on both geographic location as well as project schedule.

[1] *CEQA Guidelines* Section 15130, 15065, as amended January 1, 2000.

4.2.1 Geographic Scope

Cumulative projects are assessed for projects within a similar geographic area. The geographic area varies depending on the environmental resource. For example, the geographic area associated with construction noise impacts would be limited to areas directly adjacent to construction sites, whereas the geographic area affected by construction-related emissions generally includes the entire air basin. Impacts associated with aesthetics would include the affected viewshed, the extent of which would vary based on local and regional topography.

The proposed project is located in southwestern San Bernardino County, primarily in the City of Yucaipa. This chapter considers the potential cumulative effects of the proposed project in combination with related projects occurring within approximately a 10 mile radius of Crafton Hills Reservoir. The analysis of cumulative effects includes projects in the following jurisdictions: the cities of Yucaipa, Redlands, Highland, San Bernardino, and Calimesa, and unincorporated area of San Bernardino County including Mentone.

4.2.2 Project Timing

In addition to geographic scope, cumulative impacts also take into consideration the timing of related projects relative to the proposed project. As noted above, projects considered in this analysis include those that have recently been completed, are currently under construction, or are in planning process. Schedule is particularly relevant to the consideration of cumulative construction-related impacts, since construction impacts tend to be relatively short-term. However, for future projects, construction schedules are often broadly estimated and are subject to change. Although the timing of projects is likely to fluctuate, this analysis of cumulative effects assumes that future related projects, as described below in Section 4.2.4, would be implemented concurrently with construction of the proposed project, roughly between 2009 and 2011.

4.2.3 Type of Projects Considered

As described in **Chapter 3** of this EIR, the impacts associated with implementation of the proposed project include impacts related to construction that would last for six to 18 months and long-term impacts related to project operation. Therefore, the proposed project could contribute to cumulative effects when considered in combination with impacts of other construction projects in the project area**.** For this analysis, other past, present, and reasonably-foreseeable future construction projects, particularly other infrastructure projects, in the area have been identified. In addition, long-term cumulative impacts due to operation of the proposed project in conjunction with related water infrastructure projects are assessed as well.

4.2.4 Description of Cumulative Projects

Table 4-1 lists the related projects that could potentially contribute to cumulative impacts in the vicinity of the proposed project. A brief description of the larger-scale projects or projects in the immediate vicinity of the proposed project is provided below. In addition to the projects listed in Table 4-1, additional development that has not been identified at this time could occur within the project area, as planned by the County of San Bernardino, the cities of Yucaipa, Highland, Calimesa, and Redlands, and other local or state agencies operating in the project area.

TABLE 4-1
PLANNED AND APPROVED PROJECTS IN THE PROJECT AREA

Planning Jurisdiction	Project Name	Project Type	Project Status / Construction Dates	Location
Water Infrastructure Projects				
DWR	East Branch Extension (EBX) Project Phase II	Water supply pipeline	2012 – EIR in progress	San Bernardino, Redlands, Mentone, Highland, Santa Ana River Wash area
Metropolitan	Inland Feeder Project	Water supply pipeline	Completed in 2007	Santa Ana River Wash area
SBVWCD	Santa Ana River Wash HCP, aka "Plan B"	Land Use Plan	2008	Santa Ana River Wash area
SBVMWD	High Groundwater Mitigation Project to increase pump and pipeline capacity, and plan for future construction of new pumps and pipelines	Water supply pipeline and pump stations	2007-2012+	San Bernardino, Bunker Hill Groundwater Basin
SBVMWD	San Bernardino Central Feeder Project Phase I	Water supply pipeline	Completed in 2008	City of Redlands from Texas St. to Opal St.
SGPWA	Noble Creek in-stream recharge project	Groundwater recharge	Unknown- in CEQA stage	Cherry Valley, near Orchard Street
SGPWA	EBX Extension to Cabazon	Water supply pipeline	Unknown- future planning	Yucaipa to Cabazon
SGPWA	Supplemental Water Master Plan	Master plan	Unknown- in beginning stages	Throughout SGPWA service area
Flood Control Projects				
Yucaipa/Yucaipa Valley Water District, San Bernardino County Flood Control District	Oak Glen Creek (Wilson II) Basins Project	Flood control, groundwater recharge, recreation, habitat mitigation	2008 – under construction	Yucaipa, Oak Glen Creek, south of Oak Glen Road and east of Bryant Street
Community Development Projects				
San Bernardino County	Mill Creek Development	Residential: 60 SF units	Subdivision approval in 2001	Mentone and Yucaipa
San Bernardino County	Hampton Heights	Mixed use: 495 SF units	NOP, May 2006	North of I-10 between Redlands and Yucaipa
San Bernardino County	House Land Development Co., Retail Center Expansion	Commercial: 36 acres	Planning application accepted	Redlands, Alabama St. and Lugonia Ave.
San Bernardino County	Redlands Joint Venture, LLC,	Mixed use: 1.8 million sf	Planning application accepted	Redlands- San Bernardino Ave, between Citrus Plaza Drive and Alabama

TABLE 4-1 (continued)
PLANNED AND APPROVED PROJECTS IN THE PROJECT AREA

Planning Jurisdiction	Project Name	Project Type	Project Status / Construction Dates	Location
San Bernardino County	Newcastle Partners, Inc.	Industrial: 186,000 sf	Planning application accepted	Redlands- Almond Ave. west of Nevada St.
San Bernardino County	Jacinto, Larry Living Trust, Recycling Center	Industrial: 19 acres	Planning application accepted	Mentone, Carlsbad Ave. and Baden Ave. just east of Opal Ave.
San Bernardino County	Walden Structures	Industrial: 34 acres	Planning permit approved	Mentone, east of Opal Ave. between Nice Ave. and Colton Ave.
Yucaipa	Oak Hills Marketplace	Commercial: 57 acres	Final Development Plan	Yucaipa, Live Oak Canyon Rd. and I-10
Yucaipa	Residential Subdivision Track 14429	Residential	Under construction	Corner of Bryant Street and Mill Creek Road
City of San Bernardino	Fairway Homes Residential Project	Residential: 21 acres	2008	West of Waterman Ave and south of Dumas
City of San Bernardino	University Hills Specific Plan (aka Paradise Hills Specific Plan)	Residential: 504 units	2008	San Bernardino
City of San Bernardino	Hospitality Lane	Mixed Use Commercial	2008	San Bernardino
City of San Bernardino	Martin Ranch	Residential: 353 acres	2008	San Bernardino, Verdemont area just east of Devore
Calimesa	Sunset Ranch	Residential: 160 units	Waiting for Revised plan	Calimesa, adjacent to Calimesa Blvd., northeast from I-10
Calimesa	Fiesta Oak Valley	Residential: 3,450 units	Staff Review	Calimesa, west of I-10 between County Line Road and Sandalwood
Calimesa	Heritage Oaks	Residential: 54 units	PC Hearing	Calimesa, east end of County Line Road
Calimesa	Michael Novak, storage facility	Commercial: 16 acres	PC Hearing	Calimesa, Desert Lawn Drive
Calimesa	Bruce Dickensen	Residential: 19 units	PC Hearing	Calimesa, Bryant and Douglas Streets
Calimesa	Mastercraft Homes Country Club Ridge	Residential: 264 units	Final map approved	Calimesa, Singleton Rd.
Calimesa	JP Ranch	Residential: 480 sf units; 216 units	Final map approved	Calimesa, south of Bryant, east of Country Club Drive

TABLE 4-1 (continued)
PLANNED AND APPROVED PROJECTS IN THE PROJECT AREA

Planning Jurisdiction	Project Name	Project Type	Project Status / Construction Dates	Location
Calimesa	Braswell	Residential: 97 units	Grading Plan approved	Calimesa, extension of 3rd, south of Canyon View, east of Buena Mesa.
Calimesa	Oak Valley Core, SunCal	Residential: 3,683 units	1990 EIR certification	Calimesa
Park And Recreation Projects				
Yucaipa	7th Street Park Rehabilitation – Phase I	Landscaping and facility upgrades	Completed April 2008.	7th Street Park
Yucaipa	7th Street Park Rehabilitation – Phase II	Landscaping, facility upgrades, ADA accessibility	November 2008.	7th Street Park
Yucaipa	City of Yucaipa Civic Center Park	Landscaping, facility upgrades, installation of new playground equipment	Completed February 2008	Yucaipa City Hall
Transportation Projects				
Caltrans	SR-38 from Wabash Ave to Crafton Ave	Roadway widening	2006-2007	(unincorporated) City of Mentone
Caltrans	I-10, Live Oak Canyon Rd. to Ford St.	Mixed flow lane	2007-2010	Redlands, Yucaipa
Caltrans	I-10, from Colton to Redlands	Traffic monitoring system	unknown	San Bernardino, Loma Linda, Redlands
Caltrans	Route 66 (Foothill Blvd.) and Route 259 (Highland Ave.)	Guard rail upgrade	unknown	San Bernardino
Caltrans	I-215 freeway widening-Orange Show Rd to Rialto Avenue	Roadway widening	unknown	San Bernardino
Caltrans	I-215, HOV and mixed lanes, connectors, Rt.10-210 segments 1 & 2 from south of Rialto Ave to south of Massachusetts Ave	HOV and mixed lane connectors	2008	San Bernardino
Caltrans	I-215 widening, from I-15 to Scott Rd.	Roadway widening	2010	San Bernardino
Caltrans	I-10 at Cherry, Citrus, and Cedar Ave Interchanges	Ramp widening and auxiliary lanes	2008	City of Fontana at I-10
OmniTrans	Yucaipa Transfer Facility	Public transportation	2009	
OmniTrans	E Street Bus Rapid Transit Corridor	Public transportation	2010-1012	San Bernardino, Loma Linda

TABLE 4-1 (continued)
PLANNED AND APPROVED PROJECTS IN THE PROJECT AREA

Planning Jurisdiction	Project Name	Project Type	Project Status / Construction Dates	Location
SANBAG	I-10 through Redlands	Roadway widening	Dates Unknown	Redlands
SANBAG	Baseline Ave and E Street	Roadway widening	Dates Unknown	San Bernardino and Highland
SANBAG (lead agency) and Metrolink	San Bernardino Transit center and inter-modal facility	New bus and rail facilities	In planning phase, 2012+	San Bernardino to Redlands
SANBAG	I-10 Improvements to Tippecanoe Interchange.	Interchange reconstruction	2010	San Bernardino, near Redlands
SANBAG	I-10, Live Oak Canyon to Ford Street, lane addition,	Lane addition	2010	Yucaipa
SANBAG	I-210 Freeway, I-215/I-210 high-speed connectors	New freeway and high-speed connectors	Present- 2012+	San Bernardino
SANBAG	I-215 improvements	Various	Present- 2012+	San Bernardino to Moreno Valley
SANBAG	Cal-State San Bernardino to Loma Linda Rapid Transit Line, traveling E street	Light rail	2010-2012	San Bernardino
RCTC	I-215 improvements	Connectors, interchanges, new lanes	2005-2012+	Moreno Valley
San Bernardino County	Opal Avenue rehabilitation	Roadway rehabilitation	Unknown	Mentone
San Bernardino County	Garnet Street Bridge Replacement	Bridge replacement	Unknown	Redlands
Highland	Boulder Ave., Baseline, and Greenspot Road Bridges	Bridge replacement	2009-2011	Highland
Highland	Greenspot Rd.	Roadway widening and realignment	2008-2011	Highland
Yucaipa	Live Oak/Oak Glen Interchange	Freeway on/off-ramp widening, bridge reconstruction	2007-2009	Yucaipa, Live Oak Road, and I-10 near Redlands
Yucaipa	Traffic Signal Modification	Traffic signal modification	Completed.	Yucaipa Boulevard
Yucaipa	Yucaipa Boulevard South Side Widening	Roadway widening	Unknown	Between 7th St and 10th St
Yucaipa	Oak Glen Road Interconnect Project	Traffic signal installation	Completed.	Between I-10 Freeway and Bryant Street.

TABLE 4-1 (continued)
PLANNED AND APPROVED PROJECTS IN THE PROJECT AREA

SOURCES:

San Bernardino National Forest Service, Schedule of Proposed Actions, 2007.
City of Highland, Commercial Activity Applications, September 2006.
City of Redlands, Capital Improvement Program List, 2006.
City of Redlands, Status of Major Projects List, July, 2007.
City of Yucaipa Public Works construction Update, January, 2008.
California Department of Transportation (Caltrans), State Highway Operation and Protection Program (SHOPP), 2004.
San Bernardino Association of Governments (SANBAG), Projects web site (http://www.sanbag.ca.gov/projects/index.html), May 2008.

Oak Glen Creek Basins Project

The City of Yucaipa Public Works Department is currently constructing the Oak Glen Creek Basins Project with completion scheduled for December 2008. This project includes flood control/groundwater recharge basins, recreational trails, habitat set-aside areas, and an educational signage program. In addition to the City of Yucaipa, the San Bernardino County Flood Control District is contributing funds to support this project.

The Basins Project, located in the downstream areas of Oak Glen and Wilson Creeks in the southeast corner of the intersection of Bryant Street and Oak Glen Road, will improve flood control and overflow capabilities and provide recreational opportunities and habitat mitigation. This project also will provide the Yucaipa Valley Water District with groundwater recharge facilities. The purpose of the project is to reduce the flow of water and sediment into downstream areas of Oak Glen and Wilson Creeks.

Residential Subdivision Tract 14429

A residential development is currently under construction where the Crafton Hills Reservoir access road meets Mill Creek Road. The development has included a substantial grading effort that has affected the access road. The access road has been restored by the developer. The development has been approved by the City of Yucaipa and will consist of 59 single family homes. There has been some infrastructure work to date, include the paving of streets, but the completion of on-site development is on hold due to economic considerations affecting the housing market. Therefore, no completion date is available.[2].

Phase II of the East Branch Extension Project

DWR proposes Phase II of the East Branch Extension of the California Aqueduct. This proposed project would construct a new pipeline, storage reservoir, and pump station in western San Bernardino County within the cities of Redlands, Highland, and in the unincorporated community of Mentone. A new pipeline would connect the SBVMWD existing Foothill Pipeline to the existing Crafton Hills Pump Station. A new pump station and storage reservoir would enhance flexibility of the system. The proposed project would be designed with the capacity to deliver

[2] Personal communication, Paul Toomey, Associate Planner, City of Yucaipa, August 29, 2008.

17,300 acre-feet per year (afy) of water to the San Gorgonio Pass Water Agency (SGPWA) service area. The proposed project is scheduled for completion in 2012.

4.3 Cumulative Effects

This section discusses the following CEQA Checklist question:

> *Does the project have impacts that are individually limited, but cumulatively considerable?("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?*

Significance Threshold

The project would have a cumulatively considerable impact if it resulted in substantial adverse effect when viewed in connection with the effects of past projects, the effects of other concurrent projects, and the effects of probable future projects.

Impact Analysis

Construction of the proposed Crafton Hills Reservoir expansion and connector pipeline project is scheduled to begin in 2009 and be completed in 2011. The potential cumulative contribution of the proposed project in conjunction with other related projects is discussed below by environmental resource area.

Aesthetics

The geographic scope of cumulative aesthetic impacts includes the viewsheds affected by construction and operation of the Crafton Hills Reservoir Enlargement Project. Implementation of the proposed project together with related projects could affect scenic vistas of the Crafton Hills and visual character in and around the project area.

As described in Chapter 3.1, Aesthetics, the proposed project would be visible from Bryant Street, which is proposed for designation by the City of Yucaipa as a scenic route. The proposed reservoir enlargement area would be located in the Crafton Hills and thus visible from various public vantage points throughout the City of Yucaipa (see Figures 3.1-1 through 3.1-5). The proposed connector pipeline corridor would run parallel to Mill Creek Road (SR-38), which would be visible by motorists driving along this roadway.

The Residential Subdivision Tract 14429 project, which is a residential development in the City of Yucaipa, is directly adjacent to the proposed project at the corner of Bryant Street and Mill Creek Road. Simultaneous construction of the proposed connector pipeline, together with Residential Subdivision Tract 14429, would result in cumulative impacts to the visual character of this immediate area. Construction activities require the use of heavy equipment and storage of materials at construction sites. During construction periods, excavated trenches, stockpiled soils, construction vehicles and equipment, and other materials within the construction easement would constitute negative aesthetic elements in the visual landscape that affect views of the area and

visual character of the site. The area would be viewed primarily by motorists traveling along Mill Creek Road and Bryant Street. The visual character of this area is characterized by open vacant lands and views of the Crafton Hills and San Bernardino Mountains. Construction of the proposed connector pipeline would only last for six to 12 months, and thus when considered together with other related projects, visual impacts associated with construction of the proposed connector pipeline are not cumulatively considerable. Following construction of the pipeline, which would be entirely belowground with the exception of valves and other minor facilities, the disturbed area would be revegetated and restored to pre-construction conditions. As described in Chapter 3.1, there are no long-term impacts to aesthetics associated with the proposed connector pipeline.

Construction of the reservoir enlargement would have significant, unavoidable impacts to scenic vistas, even with implementation of Mitigation Measures AES-1, AES-2, and AES-3. The proposed dam and spoil area would be visible from public vantage points such as Bryant Street, the Grape Avenue hiking trail, City Ball Fields, and surrounding residential neighborhoods. However, there are no related projects in the Crafton Hills that affect the same scenic vista. There would be no cumulative aesthetic impacts associated with the reservoir enlargement area.

Air Quality

The geographic scope of the analysis of cumulative air quality impacts includes the South Coast Air Basin. Concurrent construction of the proposed project together with other projects in the air basin would generate emissions of criteria pollutants and toxic air contaminants, including suspended and inhalable particulate matter and equipment exhaust emissions that could be cumulatively considerable. Other projects that would contribute to cumulative impacts on air quality are shown in Table 4-1. (Please note that Table 4-1 only includes projects in the general vicinity of the Crafton Hills Reservoir Enlargement Project and does not purport to list all construction projects within the air basin.)

As described in Chapter 3.2, Air Quality, construction of the proposed project would exceed SCAQMD significance thresholds for NO_x, resulting in significant and unavoidable air quality impacts, even with implementation of mitigation measures to control dust and vehicle emissions (see Mitigation Measures AQ-1 through AQ-10). Construction activity associated with other projects would generally involve the use of similar construction equipment and may overlap with the construction schedule of the proposed project. As with the proposed project, it is assumed that other project construction activity would comply with the SCAQMD required mitigation measures (see Mitigation Measures AQ-1 through AQ-10), which would reduce air quality impacts but not eliminate air pollutant emissions completely. Therefore, because construction of the proposed project would exceed significance thresholds established by the SCAQMD for activities and operations within the air basin, its contribution to cumulative air quality impacts would be cumulatively considerable.

The accumulation of GHGs has been implicated as the driving force in global climate change. Climate change is commonly used interchangeably with “global warming” and the “greenhouse effect.” Climate change can be described as changes in the measures of earth’s climate (e.g.

average temperature, precipitation, or wind patterns) caused by natural fluctuations and anthropogenic activities that alter the composition of the global atmosphere (OPR, 2008).

As described in Chapter 3.2, Air Quality, the proposed project is estimated to produce 3,650 metric tons of CO_2E/yr in the maximum year of construction. As determined in Chapter 3.2, GHG impacts are cumulative impacts, and this level of emissions would not conflict with the state goal of reducing GHG emissions to 1990 levels by 2020. In addition, project construction would not conflict with the County of San Bernardino environmental commitments to reduce GHG emissions in accordance with their 2007 General Plan (see Chapter 3.2) and would implement Policy CO 4.5 of the San Bernardino 2007 General Plan, which calls for reducing emissions through reduced energy consumption. Furthermore the project would not affect existing operational emissions. The proposed project would reduce energy consumption at the Crafton Hills Pump Station during peak demand periods and may reduce the need for electricity generation at peaking plants to provide energy to the existing pump stations. Thus, the proposed project would not have a cumulatively considerable contribution to GHG emissions and would not conflict with the state's ability to implement AB 32.

Biological Resources

The geographic scope of potential cumulative impacts related to biological resources encompasses the Crafton Hills and the Mill Creek flood plain and neighboring open space. As described in Chapter 3.3, Biological Resources, construction and operation of the proposed project would affect natural habitats. Implementation of Mitigation Measures BIO-1 through BIO-19 would minimize the project's effects, resulting in less-than-significant impacts to biological resources.

The only related project identified in Table 4-1 that is located in the immediate vicinity of the proposed project is the Residential Subdivision Tract 14429, which is a residential development in the City of Yucaipa, directly adjacent to the proposed connector pipeline at the corner of Bryant Street and Mill Creek Road. Operation of the proposed pipeline would not have a cumulatively considerable impact on biological resources when considered together with Tract 14429. Operation of the proposed pipeline would not affect biological resources or reduce the amount of open space or habitat in the project vicinity because the proposed pipeline would be primarily below ground, and once construction is completed, the construction corridor would be revegetated and restored to pre-construction conditions. Thus, the proposed connector pipeline would not have a long-term effect on biological resources and would not contribute to the cumulative loss of open space.

Construction and operation of the reservoir enlargement would result in the loss of open space chaparral habitat in the Crafton Hills, although this impact would be considered less than significant with implementation of mitigation measures as described in Chapter 3.2. This habitat has inherent value and provides habitat for various special-status species. When considered together with the loss of open space associated with Tract 14429, impacts to biological resources could be cumulatively considerable. In general, community development proceeds in accordance with Land Use Plans identified in a city or county General Plan, and the effects of changing land use patterns are evaluated in the associated General Plan EIR. For example, the Land Use Plan for

the City of Yucaipa would result in the conversion of open space to urban land use, as acknowledged in the 1992 City of Yucaipa General Plan EIR. The loss of open space would result in significant unavoidable impacts to biological resources due to impacts to sensitive habitats and species. This significant unavoidable impact of development is acknowledged in the Statement of Overriding Considerations for implementing the General Plan. Implementation of the proposed project would contribute to the cumulative impacts to biological resources in the project vicinity. No mitigation measures other than those identified for the direct impact are available to reduce the cumulative impact to less than significant levels.

Cultural Resources

The geographic scope of potential cumulative impacts related to cultural resources encompasses the reservoir enlargement area, the connector pipeline corridor, and the immediate vicinity. As described in Chapter 3.4, Cultural Resources, construction of the proposed project would include earthmoving activities that could unearth previously unknown archaeological or paleontological resources. Mitigation Measures CR-1 through CR-6 are identified to mitigate any impacts to cultural resources due to construction of the proposed project to less than significant levels. Cultural sites identified during construction would be recorded at the San Bernardino Archaeological Information Center. Other development projects planned for the area, including Residential Subdivision Tract 14429, could also encounter cultural resources. Each project would be responsible for recording new sites appropriately. Uncovering archaeological and paleontological resources generally adds to the regional understanding of the area's history and would not result in a cumulatively considerable adverse impact to cultural resources.

Geology, Soils, Seismicity and Mineral Resources

The geographic scope of potential cumulative impacts related to geology, soils, seismicity, and mineral resources encompasses the reservoir enlargement area, the connector pipeline corridor, and immediate vicinity. As described in Chapter 3.5, construction of the proposed project would include earthmoving activities that could result in soil erosion. The proposed project would require a grading plan and SWPPP, which require erosion control features and construction practices that minimize soil erosion. With implementation of control measure, the proposed project's direct soil erosion impacts would be less than significant.

All of the construction projects listed in Table 4-1 would include some degree of ground disturbance and/or excavation activities and therefore would have the potential to contribute to a significant cumulative impact to soil erosion. However, DWR and its contractors would implement measures and design features to minimize soil erosion. The incremental contribution of the proposed project to impacts to soils would not be cumulatively considerable.

As described in Chapter 3.5, a portion of the proposed connector pipeline would be located within an Alquist-Priolo Earthquake Fault Zone (APEFZ) for the San Andreas Fault, South Branch and in an area with high liquefaction susceptibility. Cumulative impacts associated with surface rupture and liquefaction include service interruptions due to rupture or failure of water infrastructure, such as the proposed pipeline. Cumulative impacts of the proposed project together with related

water infrastructure projects due to surface rupture and liquefaction would be mitigated through implementation of design criteria and accepted, standard construction practices used in California, as prescribed by DWR, the DSOD, and where applicable, Title 24. In addition, once construction of the proposed project is complete, the connector pipeline would only be used occasionally in the event of a reservoir outage. Therefore, the potential for the proposed project to contribute to service interruptions would be minimal. The incremental contribution of the proposed project to impacts due to geology and seismicity would not be cumulatively considerable.

Hazards and Hazardous Materials

The geographic scope of impacts associated with hazardous materials generally encompasses the Crafton Hills and the proposed connector pipeline corridor, including the construction easement and the area within a one-quarter-mile buffer. As described in Chapter 3.6, project construction activities would require the transport, use, and disposal of hazardous materials such as fuels, oils, solvents, and glues. Exposure or inadvertent release of these materials into the environment could expose construction workers, the public, and/or the environment to potentially hazardous conditions, or adversely impact soil, surface waters, or groundwater quality. Construction activities associated with related projects identified in Table 4-1 could result in the accidental release of hazardous materials similar to the proposed project. Implementation of Mitigation Measures HA-1 and HA-2 identified in Chapter 3.6 would ensure that impacts associated with potential releases of hazardous materials would be less than significant. Mitigation Measure HA-1 requires the construction contractor to include specific BMPs in the required SWPPP that minimize the potential risk of inadvertent releases of hazardous materials during project construction. Mitigation Measure HA-2 requires DWR to update the seismic and hazardous materials Emergency Response Plans for the East Branch Extension to include the proposed project facilities. Therefore, the proposed project's contribution to these impacts would not be cumulatively considerable.

Part of the proposed project would be constructed in and around rural and open space areas potentially susceptible to wildland fires. Other projects that could affect rural or open space areas include, but are not limited to, related water infrastructure projects, projects located in unincorporated San Bernardino County, and projects on the border of rural and open space areas (see Table 4-1). Implementation of Mitigation Measure HA-3 identified in Chapter 3.6 would reduce the potential impacts associated with the risk of wildland fires to a less-than-significant level for the proposed project. Mitigation Measure HA-3 requires the construction contractor to implement specific BMPs to minimize the potential for fires to start or to spread. Therefore, the proposed project's contribution to cumulative impacts to fire safety and the risk of wildland fires would not be cumulatively considerable.

Hydrology and Water Quality

The geographic scope of potential cumulative water quality impacts encompasses the Santa Ana River, Mill Creek, and their tributaries and associated drainage areas within the proposed project area. As discussed in Chapter 3.7, construction activities associated with the project could

degrade water quality from sedimentation as a result of increased erosion or from the release of fuel or hazardous materials. The other projects listed in Table 4-1 could have similar construction-related impacts on water quality in the project area, particularly the Residential Subdivision Tract 14429 project. Construction activities at this and other project sites also could increase erosion and subsequent sedimentation, with impacts on water quality as well as storm drain capacity. State law requires DWR to prepare and implement a SWPPP that identifies potential pollutant sources and BMPs to reduce pollutants in storm water discharges. Therefore, the contribution of the proposed project to this cumulative water quality impact would not be cumulatively considerable.

The proposed project includes a new permanent maintenance road, which if improperly maintained could initiate or exacerbate rill and gully formation and or erosion by concentrating runoff. Other development projects in the vicinity of the proposed project (see Table 4-1) also could include new access roads that would similarly affect erosion in the watershed. Mitigation Measure HYDRO-1 identified in Chapter 3.7 would ensure long-term BMPs are implemented for the proposed maintenance road near the reservoir enlargement area. The BMPs would require implementation of design elements to control runoff and erosion and long term operation/maintenance of the roadway. As a result, the contribution of the proposed project to cumulative water quality effects due to erosion would not be cumulatively considerable.

Land Use, Agriculture, and Recreation

The geographic scope of impacts on land uses, agriculture, and recreational facilities includes the planning jurisdictions of the cities of Redlands, Yucaipa, and unincorporated San Bernardino County. The proposed project would not affect agricultural lands, and therefore there would be no cumulative impacts to agricultural resources associated with the proposed project. Construction of the proposed project would affect access to recreational trails in the vicinity of the Crafton Hills. Implementation of mitigation measures described in Chapter 3.8 would reduce recreational impacts to less than significant levels by notifying Conservancy members and the San Bernardino National Forest San Gorgonio Ranger Station about temporary trail closures and by ensuring that the City trail network in the Crafton Hills remains intact after project implementation. There are no other related projects that would affect recreational resources in the Crafton Hills, and thus there would be no cumulative impacts to recreation associated with the proposed project.

Construction and operation of the reservoir enlargement area would result in a significant and unavoidable loss of open space in the Crafton Hills even with implementation of mitigation measures as described in Chapter 3.8. Implementation of other related water infrastructure, flood control, and community development projects identified in Table 4-1 also could result in permanent loss of open space resulting in cumulatively considerable impacts. In general, community development proceeds in accordance with Land Use Plans identified in a city or county General Plan, and the effects of changing land use patterns are evaluated in the associated General Plan EIR. For example, the Land Use Plan for the City of Yucaipa would result in the conversion of open space to urban land use, as acknowledged in the 1992 City of Yucaipa General Plan EIR. This significant unavoidable impact of development is acknowledged in the Statement of Overriding Considerations for implementing the General Plan. Implementation of

the proposed project would contribute to the cumulative impacts to open space in the project vicinity. No mitigation measures are available to reduce such impacts to less than significant levels.

Noise and Vibration

The geographic scope of potential cumulative noise and vibration impacts encompass the proposed construction sites (reservoir enlargement and pipeline) and immediate vicinity as well as the access and haul routes. As discussed in Chapter 3.9, construction of the reservoir enlargement could expose sensitive receptors and land uses to noise levels in excess of established standards. However, implementation of Mitigation Measures N-1 through N-5 would reduce impacts of project construction noise to less than significant levels.

Other construction projects that could contribute to cumulative noise impacts include those within the range of audible noise from the proposed pipeline and reservoir construction. The only other project planned in the immediate vicinity of the proposed project components is Residential Subdivision Tract 14429. Tract 14429 is approximately 800 feet from the supplemental borrow area for the reservoir enlargement and approximately 2,000 feet from the reservoir enlargement area itself, shielded from both by the topography of the Crafton Hills. There are no sensitive receptors located between the two projects that would be affected by combined noise from construction of the reservoir enlargement and Tract 14429. The proposed connector pipeline is located north of SR-38, opposite Tract 14429. The noise levels associated with pipeline trenching activities could contribute to cumulative noise impacts when considered together with construction noise associated with Tract 14429. However, there are no sensitive receptors close enough to the pipeline alignment that would be effected by its cumulative noise contribution. The incremental contribution of the proposed project to noise impacts would not be cumulatively considerable.

Traffic

As described in Chapter 3.10, construction of the proposed project would generate increased vehicle trips (by construction workers and construction vehicles); increase potential traffic safety hazards; affect emergency access; and increase demand for parking in the vicinity of construction sites. Mitigation Measures TR-1 through TR-5 would be implemented by DWR to reduce all impacts due to construction-related traffic to less than significant levels. These mitigation measures include a Traffic Control Plan, encroachment permits from Caltrans District 8, properly sized staging areas located off roadways, parking plans for construction worker parking, and coordination with law enforcement agencies and the fire department prior to construction.

Other construction projects that could contribute to cumulative traffic impacts include those listed in Table 4-1 that would use the same or adjacent streets and local highways for haul routes and related construction traffic. When considered together, the construction traffic for the proposed project and related projects could affect traffic safety hazards and traffic congestion due to increased vehicle trips. Mitigation Measure CUM-1 commits DWR to coordinating haul routes with local jurisdictions. The proposed project's incremental contribution to cumulative traffic

during construction would not be considerable. Once construction is completed, the project would have no impact to traffic.

Utilities, Energy, and Public Services

As described in Chapter 3.11, construction of the proposed Crafton Hills Reservoir Enlargement Project could result in significant project impacts associated with accidental disruption of utility services and with disruption to water utility services due to connection of the proposed pipeline with the East Branch Extension Pipeline or Yucaipa Pipeline. Implementation of Mitigation Measures PU-1 and PU-2 would reduce any impacts to less than significant levels by requiring coordination with other utility companies and jurisdictions to determine the location of other underground utility lines and pipes and by requiring the construction contractor to protect and support existing utility lines that are within proposed excavation areas.

Construction activities associated with many of the projects listed in Table 4-1 also could result in the disruption of utilities service. However, implementation of Mitigation Measures PU-1 and PU-2 would ensure that the proposed project's incremental contribution to cumulative impacts on public services and utilities would not be cumulatively considerable.

Mitigation Measures

CUM-1: At least two weeks before construction activities begin, DWR shall coordinate with the City of Yucaipa and San Bernardino County to determine other construction projects that would occur at the same time as the Crafton Hills Reservoir Enlargement Project. Haul routes shall be established to avoid heavily congested roads and road construction areas where feasible.

Significance Conclusion

Less than significant with mitigation. Implementation of Mitigation Measure CUM-1, as well as the mitigation measures in Chapter 3, would reduce the cumulative contribution of the proposed project to less-than-significant levels for the following resource areas: Cultural Resources; Geology, Soils, Seismicity and Mineral Resources; Hazards and Hazardous Materials; Hydrology and Water Quality; Noise; Traffic and Transportation; and Utilities, Energy, and Public Services.

Significant and unavoidable. The proposed project would have cumulative impacts to the following resources areas during the 18-month construction period: Air Quality.

Significant and unavoidable. The proposed project would have long-term cumulative impacts to the following resource areas: Aesthetics (due to impacts to visual quality); Biological Resources (due to loss of habitat); and Land Use (due to loss of open space).

CHAPTER 5
Growth Inducement

The *CEQA Guidelines* (§15126.2(d)) require that an EIR evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined as:

> …the way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are [public works] projects which would remove obstacles to population growth…. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can have direct and/or indirect growth inducement potential. Direct growth would result if a project, for example, involved construction of new housing. A project would have indirect growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial or governmental enterprises) or if it involved a construction effort with substantial short-term employment opportunities that indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, a project would indirectly induce growth if it removed an obstacle to additional growth and development, such as removing a constraint on a required public service, such as expanding a wastewater treatment plant.

A project that is determined to be growth inducing can result in subsequent environmental effects as a result of such growth. These environmental effects are considered indirect secondary effects of growth. Secondary effects of growth can result, for example, in significant increased demand on community and public service infrastructure; increased traffic and noise; degradation of air and water quality; and conversion of agricultural land to urban uses.

As previously described in Chapter 2, Project Description, the objectives of the proposed project are to essentially reduce DWR's required peak hour pumping by filling the enlarged reservoir during off peak periods, reducing pumping costs and relieving pressure on the energy grid. Implementation of these proposed upgrades would allow DWR to continue to operate the Crafton Hills Reservoir as a raw water storage reservoir while simultaneously reducing the frequency of pumping required to fill the reservoir. The proposed project would enlarge the existing reservoir and increase the storage capacity, allowing for longer drawdown periods and for the reservoir to be refilled during low energy demand periods. Enlargement of the reservoir would provide operational flexibility of the Crafton Hills Reservoir facility. The proposed project would not result in an increase in water deliveries to the area because the size and capacity of the reservoir

inlet and outlet pipelines would not change. No changes would be made to the Crafton Hills Pump Station facility or the Greenspot Pump Station facility to increase pumping capacity into the Crafton Hills Reservoir. The proposed project would not increase the capacity of the East Branch Extension pipeline and thus would not increase water deliveries to customers.

The proposed connector pipeline would allow DWR to maintain water deliveries to the East Branch Extension pipeline while the reservoir is being enlarged. After the enlargement is complete, the connector pipeline would remain in place to provide a bypass in the event of a reservoir outage. This pipeline would not provide a new connection to new customers and thus would not accommodate any increased water deliveries.

Implementation of the proposed project would have no potential to directly foster population growth or to result in the construction of additional housing. The proposed project would not have an indirect effect on population or housing growth because the project would not create a new water supply and would not remove an obstacle to growth. Project construction is not expected to create substantial employment opportunities beyond the level normally available to construction workers in the area. Construction of the proposed connector pipeline and reservoir enlargement would require approximately 30 workers each. In general, workers are expected to be drawn from the local labor pool**.** A limited amount of accommodations for construction workers may be required during construction. However, there is sufficient rental housing available in the project vicinity to meet the needs of construction workers. The proposed project would have no direct or indirect impacts on growth. Accordingly, the proposed project would not result in any secondary effects of growth.

CHAPTER 6
Alternatives Analysis

6.1 Introduction

6.1.1 CEQA Requirements

According to the *CEQA Guidelines*, an EIR must describe a reasonable range of alternatives to a proposed project that could feasibly attain most of the basic project objectives, and would avoid or substantially lessen any of the proposed project's significant environmental effects. This alternatives analysis summarizes the alternatives screening process conducted to identify feasible alternatives. Information to select an "environmentally superior alternative," which may be the proposed project, is also provided in this chapter.

Section 15126.6(f) of the *CEQA Guidelines* provides direction on the required alternatives analysis:

> The range of alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the lead agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision making.

An EIR need not consider every conceivable alternative to a project. Rather, the alternatives must be limited to ones that meet the project objectives, are feasible, and would avoid or substantially lessen at least one of the significant environmental effects of the project. "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social and technological factors. Section 15126.6(b) of the *CEQA Guidelines* states that an EIR:

> ... must identify ways to mitigate or avoid the significant effects that a project may have on the environment, the discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or could be more costly.

Section 15126.6 (d) of the *CEQA Guidelines* provides further guidance on the extent of alternatives analysis required:

> "The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.

The EIR must briefly describe the rationale for selection and rejection of alternatives and the information the lead agency relied on when making the selection. It also should identify any alternatives considered, but rejected as infeasible by the lead agency during the scoping process and briefly explain the reasons for the exclusion. Alternatives may be eliminated from detailed consideration in the EIR if they fail to meet most of the project objectives, are infeasible, or do not avoid any significant environmental effects.

Section 15126.6(e)(1) of the *CEQA Guidelines* also requires that the No Project Alternative be addressed in this analysis. The purpose of evaluating the No Project Alternative is to allow decision-makers to compare the potential consequences of the proposed project with the consequences that would occur without implementation of the proposed project.

Finally, an EIR must identify the environmentally superior alternative. The No Project Alternative may be the environmentally superior to the proposed project based on the minimization or avoidance of physical environmental impacts. However, the No Project Alternative must also achieve the project objectives in order to be selected as the environmentally superior alternative. *CEQA Guidelines* (Section 15126.6(e)(2)) require that if the environmentally superior alternative is the No Project Alternative, the EIR shall identify an environmentally superior alternative among other alternatives.

6.1.2 Review of Proposed Project Objectives

The proposed project would allow DWR to fill the Crafton Hills Reservoir during off-peak periods of the day, reducing demands on the energy grid, and lowering pumping costs. The current size of the Crafton Hills Reservoir is insufficient to efficiently meet local water demands. Operating under its present capacity, DWR fills the reservoir throughout much of the day and night and must operate the pumps at the Greenspot Pump Station and the Crafton Hills Pump Station during daily peak energy demand periods, placing a peak-period load on the energy grid that could be alleviated by the proposed project. The reservoir enlargement would not increase the conveyance capacity of the East Branch Extension, but would substantially enhance the system's operating flexibility and reliability. The primary project objectives are:

- Enhance the East Branch Extension's operating flexibility and reliability;
- Reduce energy demand during peak demand periods.

6.1.3 Review of Significant Environmental Impacts

As discussed in Section 6.1.1 above, the range of alternatives required to be evaluated in an EIR is limited to those alternatives that would avoid or substantially lessen any significant effects of the proposed project and could feasibly attain most of the project objectives. Provided below is a summary of the key significant impacts identified in Chapters 3.0 and 4.0 of this EIR and summarized in Table ES-1 in the Executive Summary.

Implementation of the proposed project would result in significant and unavoidable impacts to aesthetics, air quality, land use, and noise. Even with implementation of mitigation, these impacts would be significant and unavoidable. Aesthetic impacts to scenic vistas would result due to construction of the proposed dam and spoil area. Air quality impacts would result from construction emissions, which would also contribute to a significant and unavoidable cumulative air quality impact. Land use impacts would exchange open space for the enlarged reservoir and spoil pile. Sensitive receptors would be exposed to excessive noise levels during construction of the reservoir enlargement and spoil area.

The proposed project would also result in environmental impacts to the following resources that would be significant but reduced to less than significant levels with mitigation: biological resources, cultural resources, geology and soils, hazardous materials, hydrology and water quality, traffic and transportation, and utilities. Many of these impacts would only occur during construction of the proposed project and therefore would not have permanent long-term impacts to the environment.

6.2 Alternatives Rejected from Further Consideration

6.2.1 Alternatives Screening Process

This section describes the alternatives considered by DWR but rejected from further evaluation in this EIR. The screening process for identifying viable alternatives includes consideration of the following criteria:

- Ability to meet the project objectives;
- Economic and engineering feasibility; and
- Ability to reduce significant environmental effects associated with the proposed project.

6.2.2 Raise Existing Dam

Under this alternative, the Crafton Hills Reservoir dam would be raised to impound a larger volume of water. This alternative would reduce the loss of open space that would occur under the proposed project. Engineering feasibility studies have determined that, based on topography and physical site constraints, the height of the existing dam could not be raised high enough to provide enough storage to allow for reduced peak-period pumping or enhance operational

efficiency and flexibility. Therefore, this alternative would not meet any of the project objectives and is not considered a viable project alternative. This alternative has been rejected from further consideration.

6.2.3 Alternative Reservoir Enlargement Location

Under this alternative, the reservoir enlargement area would be located north rather than southwest of the existing reservoir. This alternative would result in a similar loss of open space. The existing Crafton Hills Reservoir would be enlarged by inundating the canyon north of the reservoir where the proposed supplemental borrow area is located (Figure 2-2). The topography and geomorphology of this canyon would require construction of a dam over 240 feet tall to impound water at the same surface elevation as the existing reservoir. (The proposed project requires a 90-foot tall dam.) Construction of the dam would require inlet and outlet works and was considered to be economically infeasible. Therefore, this alternative has been rejected from further consideration.

6.2.4 Storage Tanks

Under this alternative, instead of enlarging the existing reservoir, DWR would construct above ground storage tanks to accommodate additional storage capacity. This alternative would reduce the quantity of open space lost due to the proposed project, assuming the footprint of new storage tanks would be less than the footprint of the reservoir enlargement area. However, the construction of tanks with the same water storage capacity as the enlarged reservoir is not economically feasible. On a dollar–per-acre-foot basis, tanks are estimated to cost approximately five times as much as construction of the enlarged reservoir. In addition, the storage tanks would potentially result in additional aesthetic impacts depending on their location and visibility from public vantage points. Therefore, the storage tank alternative has been rejected from further consideration.

6.2.5 Alternative Reservoir Size

Under this alternative, the size of the reservoir enlargement area would be reduced by changing the location of the proposed new dam. This alternative would reduce impacts associated with the proposed project while still meeting the project objectives. Impacts associated with several environmental resource areas could be lessened by reducing the size of the footprint of the reservoir enlargement area. The size of the proposed reservoir enlargement area was selected based on a cost-benefit analysis of five alternate reservoir sizes. The goal of the analysis was to maximize the reservoir volume and energy cost savings while minimizing the costs of construction and environmental impacts. As a result of the analysis, a mid-range size for the reservoir enlargement was selected as the preferred option for the proposed project. The proposed project optimizes the earthwork balance and maximizes the reservoir size by placing spoil materials in the downstream drainage before the confluence with the next drainage. A smaller reservoir would reduce the costs of construction and but not would not maximize the long-term

potential energy cost savings that could result from operational flexibility of the reservoir and pumps. A smaller reservoir would still result in significant impacts to air quality and result in a permanent loss of open space. Therefore, this alternative is not considered a viable project alternative and has been rejected from further consideration.

6.2.6 Alternative Screening Conclusions

The alternatives described above are not considered viable project alternatives and are not considered further in this alternatives analysis. The alternatives are not viable based on the three screening criteria: 1) ability to meet the project objectives, 2) economic and engineering feasibility, and 3) ability to reduce significant environmental effects associated with the proposed project.

6.3 Alternatives Analysis

As required by CEQA, the following analysis evaluates the effects of the No Project Alternative relative to the proposed project. As provided in Section 15126.6(d) of the *CEQA Guidelines*, the significant effects of the alternative are identified in less detail than the proposed project. **Table 6-1** compares the ability for the No Project Alternative to meet the project objectives. **Table 6-2** compares the environmental impacts of the No Project Alternative relative to the proposed project.

TABLE 6-1
ABILITY OF PROJECT ALTERNATIVE TO MEET PROJECT OBJECTIVES

Project Objectives	Proposed Project	No Project Alternative
Enhance the East Branch Extension's operating flexibility and reliability	Yes	No
Reduce energy demand during peak demand periods.	Yes	No

SOURCE: ESA, 2008

6.3.1 No Project Alternative

Pursuant to Section 15126.6(e)(2) of the *CEQA Guidelines*, the No Project Alternative shall:

> …discuss the existing conditions at the time the notice of preparation is published, or if no notice of preparation is published, at the time the environmental analysis is commenced, as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services.

TABLE 6-2
SUMMARY COMPARISON OF PROJECT ALTERNATIVE IMPACTS

Potential Project Impacts	Proposed Project	No Project Alternative
Aesthetics	SU	None
Air Quality	SU	None
Biological Resources	LSM	None
Cultural Resources	LSM	None
Geology and Soils	LSM	None
Hazards and Hazardous Materials	LSM	None
Hydrology, Groundwater, and Water Quality	LSM	None
Land Use Planning and Recreation	SU	None
Noise	SU	None
Traffic and Transportation	LSM	None
Utilities, Energy and Public Services	LSM	None

LTS = Less than significant impact
LSM = Less than significant with mitigation
SU = Significant and unavoidable impact

SOURCE: ESA, 2008

For this EIR, under the No Project Alternative, construction of facilities identified under the proposed project would not be implemented. The current operation of the existing Crafton Hills Reservoir would remain unchanged.

Ability to Meet Project Objectives

The No Project Alternative would not meet any of the project objectives. The No Project Alternative would maintain the current operations of the East Branch Extension facilities but would not provide for improved operational flexibility, reliability, or allow the reservoir to be filled during off peak energy demand periods which would reduce the energy demand during peak demand periods.

Impact Analysis

Under the No Project Alternative, the impacts identified in Chapters 3 and 4 that are associated with construction and operation of the proposed project would be avoided.

Aesthetics

Under the No Project Alternative, the proposed dam would not be constructed; the existing reservoir would not be enlarged; and the connector pipeline would not be built. The impacts to visual character and scenic vistas due to construction of the proposed dam would not occur.

Air Quality

Under the No Project Alternative, the proposed dam would not be constructed; the existing reservoir would not be enlarged; and the connector pipeline would not be built. The air emissions associated with construction of the proposed project would not occur, and thus the significant impacts to air quality also would not occur. However, electricity generation would be required during the peak demand period due to the need to pump during peak demand periods.

Biological Resources

Under the No Project Alternative, the proposed dam would not be constructed; the existing reservoir would not be enlarged; and the connector pipeline would not be built. The biological resources in the reservoir enlargement area would not be affected. There would be no short-term or long-term impacts to biological resources.

Cultural Resources

Under the No Project Alternative, the proposed dam would not be constructed; the existing reservoir would not be enlarged; and the connector pipeline would not be built. There would be no excavation and therefore no potential impacts to unknown cultural resources.

Geology, Soils, and Seismicity

Under the No Project Alternative, the proposed dam would not be constructed; the existing reservoir would not be enlarged; and the connector pipeline would not be built. There would be no construction, excavation, or other ground surface disturbance. Therefore, there would be no impacts to geology or soils.

Hydrology and Water Quality

Under the No Project Alternative, the proposed dam would not be constructed; the existing reservoir would not be enlarged; and the connector pipeline would not be built. There would be no construction related impacts to surface water quality, and there would be no long-term operational impacts to groundwater quality or flood control. Under the No Project Alternative, the risk of flooding due to dam failure would remain unchanged, as the proposed new dam would not be built and the reservoir size would remain unchanged.

Hazards and Hazardous Materials

Under the No Project Alternative, the proposed dam would not be constructed; the existing reservoir would not be enlarged; and the connector pipeline would not be built. There would be no construction, excavation, or other ground disturbing activities. The potential construction-related impacts due to accidental hazardous material spills or leaks, or wildfire risks from sparking equipment would not occur.

Land Use, Agriculture and Recreation

Under the No Project Alternative, the proposed dam would not be constructed; the existing reservoir would not be enlarged; and the connector pipeline would not be built. The No Project Alternative would eliminate any conflicts with land use designations in the project area and would prevent the loss of open space associated with the reservoir enlargement. Under the No Project Alternative there would be no impacts to recreation because there would be no temporary trail closures in the Crafton Hills Open Space Area.

Utilities, Energy and Service Systems

Under the No Project Alternative, the proposed dam would not be constructed; the existing reservoir would not be enlarged; and the connector pipeline would not be built. Therefore the No Project Alternative would eliminate potential underground utility interruptions during construction and would eliminate the risk of public service interruptions from road/lane closure during the pipeline installation. The No Project Alternative would not reduce energy demand during peak demand periods.

Traffic and Transportation

Under the No Project Alternative, the proposed dam would not be constructed; the existing reservoir would not be enlarged; and the connector pipeline would not be built. The No Project Alternative would eliminate the need for additional truck trips or worker commute trips on the regional roadways as required by the proposed project. Additionally, the No Project Alternative would eliminate the potential road/lane closures associated with the proposed pipeline installation.

6.4 Environmentally Superior Alternative

CEQA requires that an EIR identify the environmentally superior alternative. Table 6-2 compares the impacts of the No Project Alternative to the proposed project. The No Project Alternative would avoid all construction and operation impacts associated with the proposed project. Thus, the No Project Alternative would be the environmentally superior alternative. However, the No Project Alternative would not meet any of the project objectives. Moreover, as stated in *CEQA Guidelines* (Section 15126.6(e (2))), if the No Project Alternative is the environmentally superior alternative, the EIR shall determine an environmentally superior alternative among the remaining alternatives. Therefore, the proposed project is considered the environmentally superior feasible alternative.

CHAPTER 7
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CHAPTER 9
Acronyms

$/af	dollar per acre foot
1,2-DCE	1,2 dichloroethylene
1994 WIP EIR	San Gorgonio Pass Water Agency Water Importation Project
1998 EBX SEIR	Department of Water Resources Phase I East Branch Extension Supplemental Environmental Impact Report
AB	Assembly Bill
AB 32	California Global Warming Solutions Act of 2006
ACECs	Areas of Critical Environmental Concern
af	acre-feet
afy	acre-feet per year
AGR	Agricultural Supply
amsl	above mean sea level
APEFZ	Alquist-Priolo Earthquake Fault Zone
AQMP	Air Quality Management Plan
ASTs	Above Ground Storage Tanks
bgs	below ground surface
BMPs	Best Management Practices
BO	biological opinion
Cal EPA	California Environmental Protection Agency
Cal OSHA	California Occupational Health and Safety Administration
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBAFA	California Buckwheat Alluvial Fan Association

CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDF	California Department of Forestry
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	Methane
CMP	Congestion Management Program
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CNPSEI	California Native Plant Society Electronic Inventory
CO_2	Carbon Dioxide
CO_2/yr	Carbon Dioxide per year
CO_2E	Carbon Dioxide Equivalent
COLD	Coldwater Freshwater Habitat
Corps	U.S. Army Corps of Engineers
CSS	Coastal Sage Scrub
CUPA	Certified Unified Program Agency
CWA	Clean Water Act
cy	cubic yards
D	Distance
dB	Decibel

dBA	A-weighted decibels
DBCP	dibromochloropropane
DEM	Digital Elevation Model
DPM	Diesel Particulate Matter
Draft SEIR	Draft Supplemental Environmental Impact Report
DSOD	Division of Safety of Dams
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
EBX I	East Branch Extension Phase I
EIR	Environmental Impact Report
EOs	element occurrences
ERP	Emergency Response Plan
FESA	federal Endangered Species Act
FCAA	Federal Clean Air Act
FCAAA	Federal Clean Air Act Amendments
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FICON	Federal Interagency Committee on Noise
FIP	Federal Implementation Plan
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
G	Global
ghg	greenhouse gas
GPS	global positioning system
gwp	global warming potential
GWR	groundwater recharge
H_2O	water
HAPs	Hazardous Air Pollutants

HCP	Habitat Conservation Plan
HFCs	hydroflourocarbons
HWCL	Hazardous Waste Control Law
HWMPs	Hazardous Waste Management Plans
Hz	Hertz
I-10	Interstate 10
IBC	International Building Code
lcfs	low carbon fuel standard
LOS	Level of Service
LSM	Less than Significant Impact with Mitigation
LTS	Less than Significant Impact
LV	vibration level
M	Magnitude
M&I	municipal and industrial
MAQMD	Mojave Air Quality Management District
MBTA	Federal Migratory Bird Act
MMI	Modified Mercalli Intensity
MMRP	Mitigation Monitoring and Reporting Plan
$MMTCO_2E$	Million Metric Tons of Carbon Dioxide Equivalent
MPO	Metropolitan Planning Organization
msl	mean sea level
MUN	Municipal and Domestic Supply
Mw	moment magnitude
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NCCP	National Community Conservation Plan
NMFS	National Marine Fisheries Service
NOP	Notice of Preparation

NO_x	Nitrogen Oxides
NPDES	National Pollution Discharge Elimination System
NPL	National Priorities List
O_3	Ozone
OCAP	Operating Criteria Plan
OES	Office of Emergency Services
OHWM	Ordinary High Water Mark
OSHA	Occupational Health and Safety Administration
PAH	Polycyclic Aromatic Hydrocarbons
PCE	Perchloroethylene also known as PERC
PD	Planned development
PFCs	Perflourocarbons
PM-10	Respirable Particulate Matter
PM-2.5	Respirable Fine Particulate Matter
PPV	peak particle velocity
PRC	Public Resources Code
RAFSS	Riversidian alluvial fan sage scrub
RARE	Preservation of Rare and Endangered Species
RCPG	Regional Comprehensive Plan Guide
RCRA	Resource Conservation and Recovery Act
REC 1	Water Contact Recreation
REC 2	Non-Contact Water Recreation
RMS	Root Mean Square
ROG	Reactive Organic Gases
ROWD	Report of Waste Discharge
RPW	Relatively Permanent Water
RS	Single Residential
RTP	Regional Transportation Plan

rv	recreational vehicle
RWQCB	Regional Water Quality Control Board
S	State
SAFS	San Andreas Fault System
SAFZ	San Andreas Fault Zone
SARWQCB	Santa Ana Regional Water Quality Control Board
SBBA	San Bernardino Basin Area
SBCSD	San Bernardino County Sheriffs Department
SBNF	San Bernardino National Forest
SBVMWD	San Bernardino Valley Municipal Water District
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	Southern California Air Quality Management District
SCE	Southern California Edison
SF_6	sulfur hexaflouride
SGPWA	San Gorgonio Pass Water Agency
SIP	State Implementation Plan
SOI	Sphere of Influence
SPCC	Spill Prevention Control and Countermeasure
SR-30	State Route 30
SR-38	State Route 38
SU	Significant and Unavoidable Impact
SWP	State Water Project
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TACs	Toxic Air Contaminants
TCE	Trichloroethylene
TDS	Total Dissolved Solids

TIN	triangulated irregular network
TMDL	Total Maximum Daily Load
TNW	Traditional Navigable Water
TSCA	Toxic Substances Control Act
USEPA	United States Environmental Protection Agency
USFS	United States Department Forest Service
USFWS	Unite States Fish and Wildlife Services
USTs	underground storage tanks
Vdb	decibel notation
VOCs	volatile organic compounds
WARN	Warm Freshwater Habitat
WDRs	Water Discharge Requirements
WILD	Wildlife Habitat
WIP	Water Importation Project
WQMP	Water Quality Management Plan
YVWD	Yucaipa Valley Water District