



**US Army Corps  
of Engineers®**

## **PRADO DAM AND BASIN**

**SAN BERNARDINO COUNTY, CALIFORNIA**

**Draft ENVIRONMENTAL ASSESSMENT &  
FINDING OF NO SIGNIFICANT IMPACT for  
GROUNDWATER LEVEL MONITORING WELLS**

***Prepared for***

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September 6, 2013

**Draft FINDING OF NO SIGNIFICANT IMPACT**  
**Groundwater Level Monitoring Wells Project**  
**In Prado Dam Basin**  
**San Bernardino County, California**

I have reviewed the Environmental Assessment (EA) that has been prepared for the proposed action by Inland Empire Utility Agency (IEUA) to install 9 groundwater level monitoring wells, at five locations in the Prado Dam Basin, San Bernardino County, California. The purpose of the wells is to monitor groundwater levels as well as groundwater water quality in this region of San Bernardino County. The EA has been prepared in compliance with applicable Federal laws, regulations, and Executive Orders and Corps' policies. The EA analyzes the impacts, of the proposed alternatives, upon the environmental and human resources in and adjacent to the area of the proposed action.

Under the No Action Alternative, the nine groundwater level monitoring wells would not be installed. The No Action Alternative would not meet the purpose and need of the proposed project, although it was carried forward for comparison purposes.

The Preferred Alternative includes installation of groundwater level monitoring wells at 5 locations. At four of the five locations, two wells would be installed (accounting for both Low and High aquifers; at the fifth location, one well already exists and just one would be installed) amounting to nine new wells at five locations. The monitoring wells would be drilled to approximately 50-100 feet in depth. The groundwater level data would be collected on a quarterly basis during a term consistent with the lease (25 years). The Preferred Alternative would meet the need and purpose of the proposed project.

With implementation of the environmental commitments identified in Chapter 4.0 during the groundwater level monitoring well installation activities in the area of the Proposed Action, all potential adverse effects to environmental and human resources, in and adjacent to the project area, would be reduced to less than significant impact. The Preferred Alternative would most effectively meet the need and purpose of the proposed action.

I have determined that implementation of the Preferred Alternative with the incorporation of the Environmental Commitments identified in this EA is in compliance with Section 106 of the National Historic Preservation Act (36 CFR 800), the Endangered Species Act, Migratory Bird Treaty Act, and other Federal laws, regulations, and Executive Orders as described in this EA.

I have considered the available information contained in the EA, and it is my determination that there are no significant adverse impacts on the quality of the human environment which would result from approval of the

Recommended Plan. There are no unresolved environmental issues. Therefore, preparation of an Environmental Impact Statement (EIS) is not required.

Prepared by:

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Date

Approval Recommended by:

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Colonel, US Army  
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\_\_\_\_\_  
Date

**NOTICE OF PREPARATION**  
**Groundwater Level Monitoring Wells Project**  
**In Prado Dam Basin**  
**San Bernardino County, California**

This Draft Environmental Assessment (EA) has been prepared by the US Army Corps of Engineers (Corps) in compliance with the National Environmental Protection Act (NEPA) other Federal laws, regulations, Executive Orders, and Corps' policies. The Corps is the lead Federal agency for the Proposed Action, as no other agency is involved in implementing the Proposed Action.

The Draft EA will be provided for agency and public review to solicit input on the Proposed Action and will be made available for 30 days. Comments received will be considered in determining whether an Environmental Impact Statement (EIS) will be required or whether a Finding of No Significant Impact (FONSI) can be issued.

The Prado Dam Basin (Basin) is located on the mid-Santa Ana River corridor and includes portions of the cities of Chino, Norco, and Corona, San Bernardino County, California. The Basin is bordered on the south by State Route 91 and on the west by State Route 71. Most of the proposed project would take place on Corps-controlled lands leased for recreation by San Bernardino County.

The Proposed Action is the installation of 9 groundwater level monitoring wells at 5 locations (two at each of four sites, and one at the fifth site). The monitoring wells will be drilled to approximately 50-100 feet in depth. The groundwater level data will be collected on a quarterly basis for a term consistent with the lease (25 years).

Long-term management would continue to include periodic sediment removal from the project area as needed to maintain Basin capacity for flood risk management.

The comment period for this Notice shall be from September 6 through October 7. Comments should be received no later than close of business on October 7, 2013, and may be provided to:

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## 1.0 INTRODUCTION

This Environmental Assessment (EA) has been prepared by the US Army Corps of Engineers (Corps) to comply with the National Environmental Protection Act (NEPA) (42 USC 4321 et seq.), Council on Environmental Quality (CEQ) regulations published at 42 Code of Federal Regulations (CFR) part 1500, other environmental laws, Executive Orders, and Corps' regulations. The purpose of the EA is to provide sufficient information on the existing environmental conditions within the area of the Proposed Action and the potential environmental effects of the No-Action Alternative and various alternative actions so decision makers can determine the need to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

For the purposes of this document and pursuant to guidelines for implementing NEPA, the baseline used for the impact analysis reflects conditions at the time of the preparation of this report. No other Federal agency has been designated as a cooperating agency (40 CFR 1501.6).

### 1.1 Proposed Action

The Action proposed is from the Inland Empire Utilities Agency (IEUA) for installation of 9 groundwater level monitoring wells at 5 locations within the Proposed Action Area, defined in Section 1.2. The monitoring wells would be drilled to approximately 50-100 feet in depth. The groundwater level data would be collected on a quarterly basis for a term consistent with the lease (25 years).

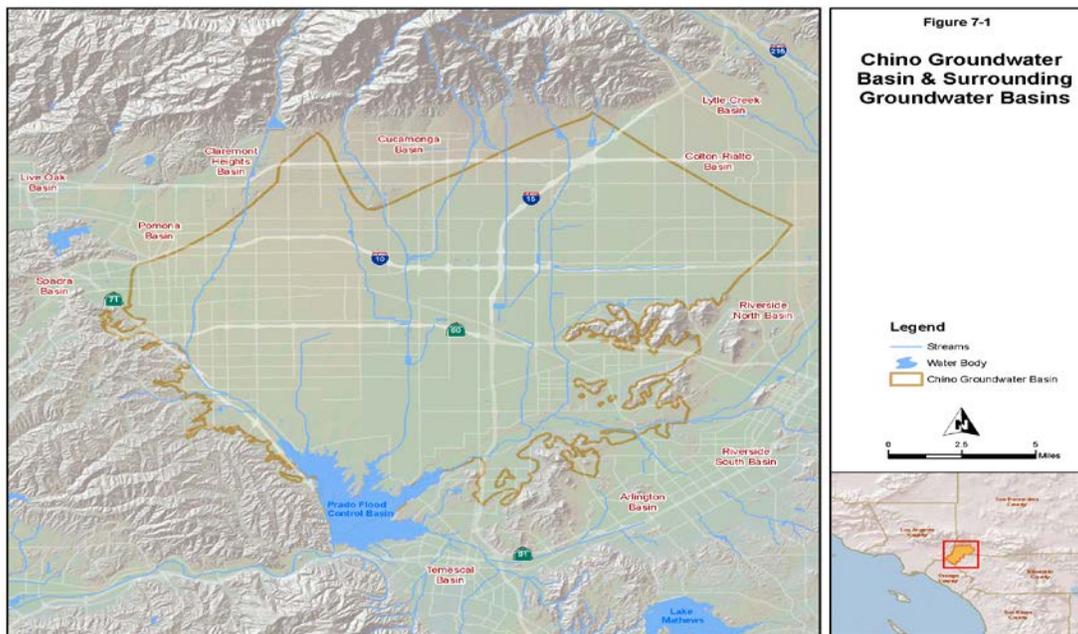
### 1.2 Proposed Action Area

The Proposed Action would occur within the Chino Groundwater Basin (*Chino Basin* or the *Basin*) which consists of an alluvial valley that is relatively flat from east to west, sloping from north to south at a 1-2% grade and whose ground-surface elevation ranges from about 2,000 feet above mean sea level (ft-msl) adjacent to the San Gabriel Mountains to about 500 ft-msl near Prado Dam. The Chino Basin is bounded (Figure 1):

- on the north by the Six Basins and the Cucamonga Basin;
- on the east by the Rialto-Colton Basin, the Riverside Basins, and bedrock outcrops of the Jurupa Hills and the Pedley Hills;
- on the south by the bedrock outcrops in La Sierra area and the Temescal Basin; and
- on the west by the Spadra Basin and bedrock outcrops in the Chino Hills and Puente Hills, and the Pomona and Claremont Basins.

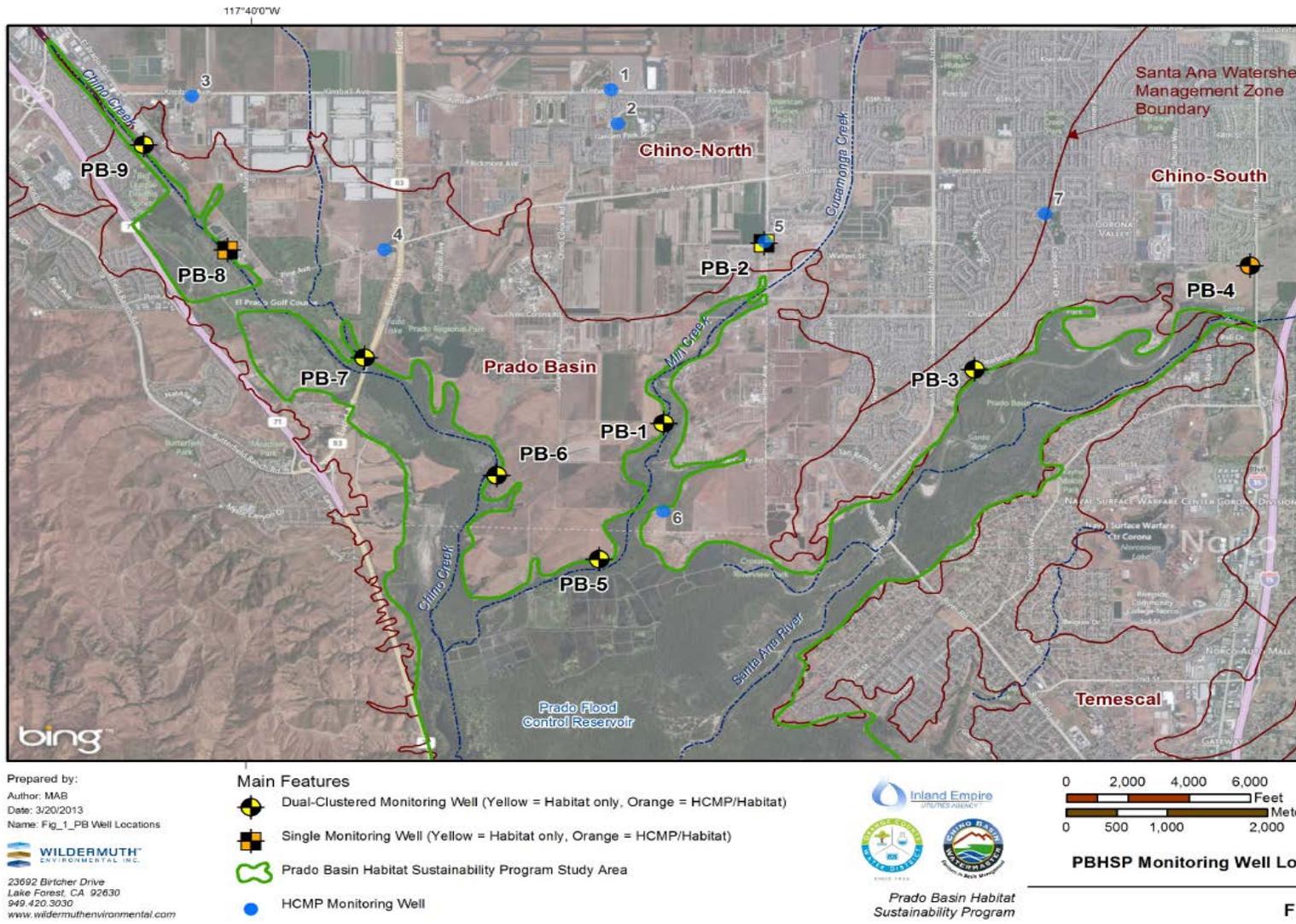
The principal drainage course for the Basin is the Santa Ana River. It flows 69 miles across the Santa Ana River watershed from its origin in the San Bernardino Mountains to the Pacific Ocean. The Santa Ana River enters the Basin at the Riverside Narrows and flows along the southern boundary of the Basin to the Prado Flood Control Basin where it is eventually discharged through the outlet at Prado Dam and flows the remainder of its course to the Pacific Ocean. The Prado Basin is traversed by a series of ephemeral and perennial streams that include: San Antonio Creek, Chino Creek, Cucamonga Creek, Deer Creek, Day Creek, Etiwanda Creek and San Sevaine Creek.

Figure 1 Chino Groundwater Basin & Surrounding Groundwater Basins



The Proposed Action would install 9 groundwater level monitoring wells at 5 different locations on Corps property, along the border between Chino Basin and the more southern Prado Basin. ***The 5 proposed groundwater level monitoring well locations are along the Chino and Mill Creek corridors (PB-1, PB-6a, PB-7, PB-8, PB-9) (Figure 2, following page).*** Other wells which are shown on the Figure are located off of Federal land, and are or have been addressed elsewhere. The Proposed Action Area, where nine wells would be installed, is generally included on lands within the San Bernardino County recreation outgrant with the U.S. Army Corps of Engineers, Los Angeles District.

Figure 2 Monitoring Well Locations (PB-1, PB-6, PB-7, PB-8 and PB-9 are all on Corps Property)



Note the locations of proposed Monitoring Wells PB-1, PB-6, PB-7, PB-8 and PB-9.

### **1.3 Authority**

The construction of Prado Dam was authorized pursuant to the Flood Control Act of 1936, as amended, as part of an overall plan to construct flood damage reduction facilities in the Santa Ana River Basin. The Flood Control Act of 1944, as amended, further authorized the U.S. Army Corps of Engineers to construct, maintain, and operate recreation facilities. The Federal Water Project Recreation Act of 1965 and the Water Resource Development Act of 1986 authorized new recreation development in the Prado Basin.

Approximately 5,397.7 acres (2,184.3 hectares) of Corps-controlled Basin land has been leased for recreation development by: the City of Corona, the County of Riverside, and the County of San Bernardino. The wells, proposed by the regional, Inland Empire Utilities Agency/IEUA, would benefit groundwater conditions in aquifers immediately beneath recreation lands leased from the Corps by San Bernardino County.

### **1.4 Background**

This section provides detailed background which is considered beneficial in understanding the current proposal, which is presented in Section 1.4.1, page 11, below.

The IEUA's original groundwater management plan for the Chino Basin was the *Optimum Basin Management Plan (OBMP)*. IEUA compiled a Programmatic Environmental Impact Report (*PEIR*) for the *OBMP* and certified this document in July, 2000. The *OBMP PEIR* provided the environmental baseline for implementation of nine program elements designed to maintain the volume of water stored in the Chino Groundwater Basin; to initiate clean-up of groundwater quality within the Basin; and to achieve hydraulic control of the Basin. After approximately 10 years, the Chino Basin stakeholders concluded that additional efforts were required to achieve hydraulic control of the Basin. This resulted in a second agreement among the Basin stakeholders, the *Peace II Agreement*.

In August, 1999, Phase 1 of the *OBMP* had established that groundwater monitoring must be conducted in order to obtain current water quality and water level data in Chino Basin (WEI, 1999). These data are necessary for defining and evaluating specific strategies and locations for the mitigation of nitrate, TDS, and other Constituents of Potential Concern (COPCs); new recharge sites; and pumping patterns that result from the implementation of the *OBMP*.

The *Peace II Agreement* incorporates the following elements: expansion of Chino Desalter operations including construction of a new well field in the southwestern portion of the Basin; the Chino Creek Well Field; and re-operation of the [groundwater] Basin to increase controlled overdraft of the Basin up to 400,000 acre-feet. The Agreement also included expansion of the artificial recharge capacity of the Basin and expansion of storage and recovery programs. The IEUA and Chino Basin Watermaster (*Watermaster*) compiled a *Subsequent Environmental Impact Report (SEIR)* which was certified on October 6, 2010, by the IEUA Board of Directors, in

response to Peace II Project. The overall implementation of these programs was concluded to cause only one unavoidable significant adverse impact over the life of the Peace II Agreement, regional air quality emissions. All other issues were found to be less than significant with mitigation.

One issue which was found to be controversial, and which received extensive comment from the Orange County Water District (OCWD) and California Department of Fish and Game (recently renamed *California Department of Fish and Wildlife*), relates to the potential of a drawdown of the groundwater table, beneath Prado Basin, which could cause adverse impacts to the important wetland resources behind Prado Dam. Although IEUA's groundwater modeling of this potential impact indicated that there would be no significant adverse impact to Prado Basin habitat resources due to achieving hydraulic control of the Chino Groundwater Basin, nevertheless, to address the concern, Basin stakeholders committed to implement Mitigation Measure 4.4-3 from the approved *SEIR Mitigation Monitoring and Reporting Program* (p. 27), to monitor groundwater levels in the vicinity of Prado Basin to verify any modeling results.

To implement Mitigation Measure 4.4-3, IEUA and Watermaster created a committee of stakeholders to assist with implementation of the *Prado Basin Habitat Sustainability Program* (PBHSP or Program). A key component of this Program would monitor the change in groundwater elevation within a defined Prado Basin study area. It was determined that there are insufficient monitoring wells in the Prado Basin study area to effectively monitor changes in groundwater levels in the area of concern. Thus, for purposes of better information-gathering, the purpose of this project is to install groundwater level monitoring wells under the scope of the certified *Peace II Project SEIR*.

The 2010 *SEIR* identified the estimated *Peace II* program needs for the foreseeable future. One of the types of facilities described in the 2010 *SEIR* includes future Monitoring Wells:

#### Monitoring Wells

*It is anticipated that approximately 30 more wells will be installed as part of the OBMP, with one or two installed in a given year. The Chino Desalter Program has installed 3 monitoring wells to date, included in the total number of OBMP wells, and anticipates installing two additional monitoring wells as part of the Chino Creek Well Field.*

*Monitoring wells may be installed to monitor groundwater quality in the future. Typically these are drilled to shallower depths than water production wells and do not require test pumping, thus they require less development time and fewer materials to construct. It is forecast that development of a single monitoring well would result in air emissions equal to one half the emissions associated with development of a single production well.*

The PBHSP-committee stakeholders' Proposed Action would install 16 additional groundwater level monitoring wells at 9 locations (of which 5 locations are proposed here) to provide

sufficient monitoring data to evaluate groundwater-level changes within the Prado Basin area. This project constituted a “second-tier” project within the scope of the 2010 SEIR and the IEUA Board of Directors subsequently adopted an *Addendum to the 2010 SEIR* on March 20, 2013.

#### **1.4.1 Project Characteristics**

The Action proposed would install 9 groundwater level monitoring wells at 5 different locations on Corps property, along the border between Chino Basin and Prado Basin. The 5 proposed well locations are along the Chino and Mill Creek corridors (***PB-1, PB-6a, PB-7, PB-8, PB-9***) (Figure 2).

The well construction process at each borehole would be carried out in a 2-phased process, as described in Section 2.1.2 (*Preferred Alternative*).

### **1.5 Purpose and Need**

In order to comply with previous Mitigation Measure commitments, IEUA and Watermaster are required to implement the Prado Basin Habitat Sustainability Program (*PBHSP or Program*), as described above. The proposed additional 9 wells would allow IEUA and Watermaster to gather data to determine if groundwater level changes, over time. This data, in conjunction with many other parameters being monitored over time (ie. surface flows, temperature, storm events, etc.), will help the Committee determine potential causes to impact to the riparian habitat within the Prado Basin.

## **2.0 ALTERNATIVES**

This EA analyzes the likely effects of the Proposed Action by comparing a No Action Alternative with the Preferred Alternative and with other alternatives deemed to be reasonable, practicable, and feasible. The alternatives considered are limited to alternatives that would meet the purpose and need for the Proposed Action and the No Action Alternative for comparison purposes.

### **2.1 Alternatives Considered**

#### **2.1.1 No-Action Alternative**

The Corps is required to consider the option of "No Action" as one of the alternatives in order to comply with the requirements of the NEPA (at 42 CFR, part 1502.14). The No-Action Alternative is a basis for comparison with all other alternatives, as it represents a condition, both current and future, under which nothing would be done to address the identified problems. By comparing the No-Action Alternative to each alternative, the advantages and disadvantages of the alternatives may be assessed in relation to current and future "without-project" conditions.

Under the No-Action Alternative, no groundwater level monitoring wells would be installed in the Proposed Action area. The No-Action alternative would not meet the Proposed Action's purpose and need. However, for comparison purposes and to meet the requirements of NEPA, the No-Action alternative is carried forward in this EA.

### **2.1.2 Preferred Alternative**

A total of 9 monitoring wells would be constructed at 5 different locations on Corps-controlled property. One deep and one shallow well will be constructed at each of the 5 locations, except at the PB-8 location where a shallow monitoring well already exists and will be incorporated into the PBHSP monitoring program. Therefore, a deep monitoring well will be constructed at PB-8.

#### **a. Cone Penetrometer Testing (CPT)**

One cone penetrometer test (CPT) will be conducted at each well site to measure stratigraphy and the lithologic properties of underlying sediments to a depth of approximately 100 feet below ground surface (bgs). The CPT test will require an approximately 25-ton rig be mobilized to the monitoring well site, and one personal vehicle for the geologist conducting the CPT oversight. The CPT test equipment consists of a 10 cm<sup>2</sup> or 15 cm<sup>2</sup> cone penetrometer attached to a 1.5-inch diameter steel rod. The equipment is pushed into the subsurface by hydraulic force to approximately 100 feet bgs. During the test the cone penetrometer measures data that is then used to interpret soil stratigraphy and soil properties. The penetration rate of the CPT is typically 2 cm/s. During each CPT, two pore-pressure dissipation (PPD) tests will be conducted. It is estimated that each PPD test will require approximately 30 minutes to complete, therefore the total duration of CPT and PPD testing should be approximately two hours per site. When the CPT sounding is complete, the test hole is grouted. The grouting procedure generally consists of pushing a hollow CPT rod with a "knock out" plug to the termination depth of the test hole. Bentonite grout is then pumped under pressure as the 'tremie pipe' is pulled from the hole. The grouting procedure should require no more than one hour to complete.

#### **b. Groundwater Level Monitoring Well Construction**

It is anticipated a CME-95 hollow-stem auger drill rig and support truck would be used to deliver all required materials to the sites and to drill and to construct the monitoring wells. The CME-95 is equipped with a Cummins QSB 6.7L [409 Cubic Inch] 250 Horsepower six cylinder turbocharged diesel engine that is U.S. EPA Tier 3 emissions certified. The drill rig would be manned by a driller and two helpers. The drilling and construction of each well should require approximately 12 hours, and the surface completion and development of each well should require approximately 12 hours. The well drilling rig is expected to be on each site for about three to four days. All well drilling would be conducted during daylight hours.

An approximately 11-inch diameter auger would be used to drill the bore hole to a depth of 100 feet for the deep well and 50 feet for the shallow well, for a total linear footage of 150 feet (99

cubic feet of excavated material) per well site, excluding PB-8, which would be drilled to depths of approximately 50 and 100 feet, respectively.

Soil cuttings generated during drilling would be stockpiled on site. One composite soil sample will be collected from the stockpiled soil and tested for hazardous chemicals. Once chemical testing indicates the soils to be non-hazardous, the soil would be placed into a truck and transported to IEUA's RP-2 facility and transferred to a roll-off container for offsite disposal.

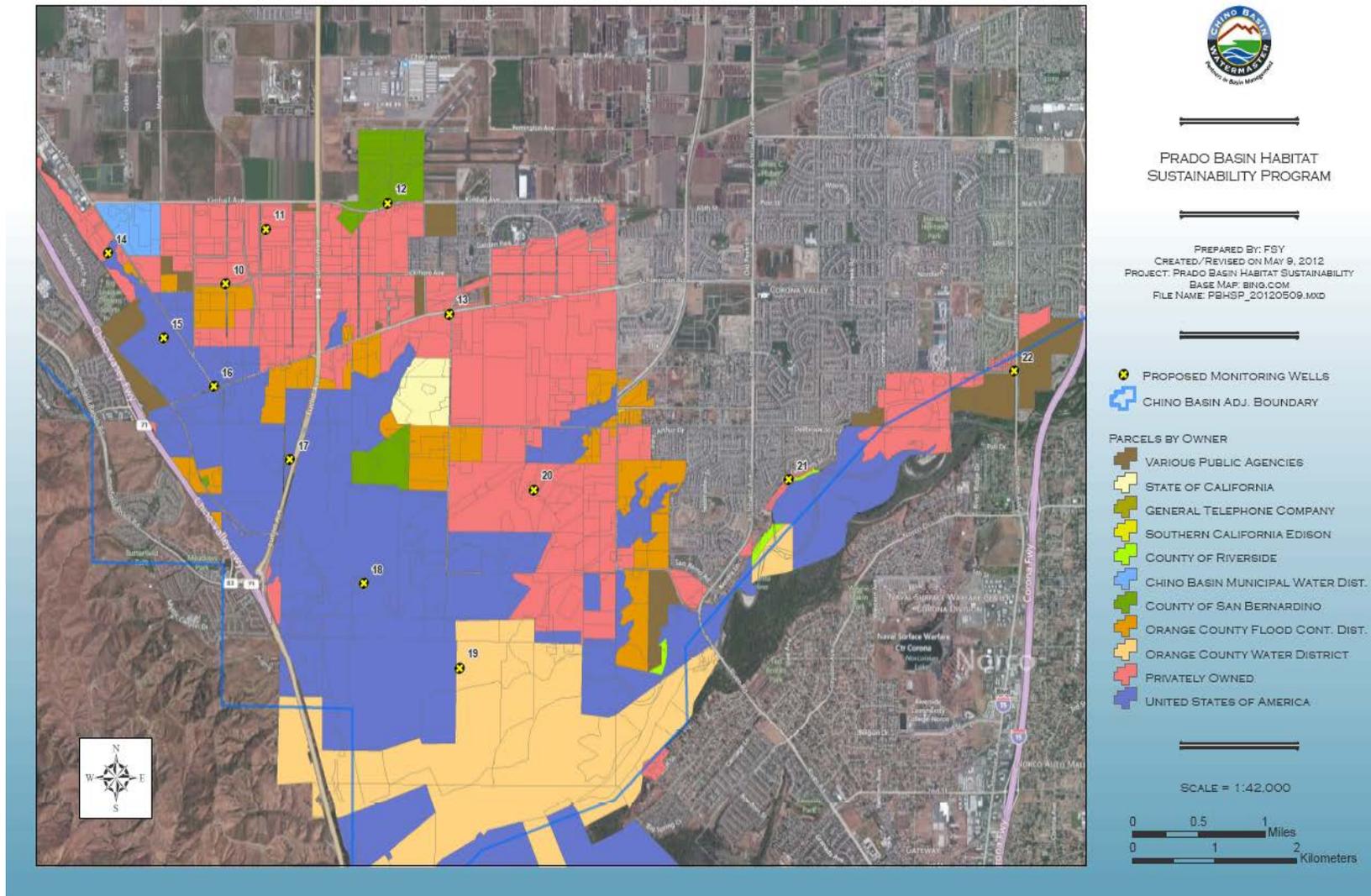
Liquids generated during well construction and development would be contained onsite within a 500 gallon truck mounted tank. As necessary, the tank would be transported to IEUA's RP-2 facility and transferred into a 6,500 gallon above-ground tank for storage prior to disposal. Water from the above-ground tank would be sampled and tested for hazardous chemicals to determine the appropriate disposal method and then be transferred to a vacuum truck for offsite disposal.

### **2.1.3 Relocation Alternative**

This alternative would require the proposed (PB-1, PB-6a, PB-7, PB-8 and PB-9) monitoring wells on Corps property, to be relocated to alternative locations, off of Corps property. These alternative locations would allow groundwater levels to be monitored but, because Corps property surrounds Chino and Mill Creeks (Figure 3), would be in poor hydrogeological locations, require deeper wells to be drilled (further away from the Creeks the further down the wells need to be drilled to reach the groundwater levels), increase project costs, and not meet the need and purpose of the Proposed Action, which is to install monitoring wells along Chino and Mill Creeks to evaluate change in groundwater levels overtime.

This alternative would not meet the IEUA Purpose and Need but will be carried through for analysis in this document for comparison purposes.

Figure 3 Land Ownership Map



## 3.0 ENVIRONMENTAL CONDITIONS AND ALTERNATIVES ANALYSIS

### 3.1 LAND USE

#### 3.1.1 Existing Conditions

The area of the Proposed Action is classified in Corps planning documents such as the *Prado Basin Master Plan* (drafts) as recreation-leased lands; the lands are leased by San Bernardino County, for outdoor recreation, at a variety of venues and environments including Prado Regional Park, the Prado Equestrian Center, El Prado Golf Course, and other concessions and open space acreage. Much of the surrounding acreage is un-built and is available for passive recreation such as hiking and picnicking; much surrounding acreage is undeveloped and vegetated in native and some non-native vegetation ranging from grass and forbe species as well as shrub and stands of various tree species. In addition, other land uses in areas surrounding the Basin consist of active or former dairylands and of more recent housing developments.

The 5 monitoring well Action Areas proposed for the recreation-leased areas would not offer impediment to recreation or natural resources management because, following the brief construction period for each proposed well (total of 5 locations), the post-construction, ground-surface features at each would consist primarily of a small, surface marker. Because of the current regional groundwater issues, the San Bernardino County lessee has indicated conceptual approval of these wells at the proposed locations.

#### 3.1.2 Significance Threshold

A significant impact would occur if the proposed project:

- Were to change land use due to implementation of the project.
- By its implementation was not in compliance with the land use classification identified in the Prado Basin Master Plan.

#### 3.1.3 Alternative Analysis

##### 3.1.3.1 No Action Alternative

There would be no change to existing land uses. No significant adverse impact to land use anticipated.

##### 3.1.3.2 Preferred Alternative

The land use would remain the same and there would be no change in the designated land use classification. The five proposed monitoring wells would pose no significant adverse impacts to existing approved land uses in the area.

### **3.1.3.3 Relocation Alternative**

There would be no change to the existing land uses on Federal land.

## **3.2 GEOLOGY AND SOILS**

### **3.2.1 Existing Conditions**

#### **Geology**

The Chino Groundwater Basin (Chino Basin or the Basin) consists of an alluvial valley that is relatively flat from east to west, sloping from north to south at a one to two percent grade. Ground-surface elevation ranges from about 2,000 feet above mean sea level, adjacent to the San Gabriel Mountains, to about 500 ft-msl near Prado Dam. The Chino Basin is bounded:

- on the north by the Six Basins and the Cucamonga Basin;
- on the east by the Rialto-Colton Basin, the Riverside Basins, and bedrock outcrops of the Jurupa Hills and the Pedley Hills;
- on the south by the bedrock outcrops in La Sierra area and the Temescal Basin; and
- on the west by the Spadra Basin and bedrock outcrops in the Chino Hills and Puente Hills, and the Pomona and Claremont Basins.

Most of the basin is within the category of 0-2% slope topography. Soils in the Basin are primarily alluvial consisting of Recent (Holocene) alluvial materials due to active stream channel and associated floodplain deposits of the Santa Ana River, Temescal Wash, Chino Creek and Cucamonga Creek. Additionally, lacustrine deposits in the reservoir fill the bottoms of canyons along the edge of the Chino Hills to the west. For the most part, Basin soil ratings from the National Resource Conservation Service indicate Slight to Moderate use limitations.

#### **Earthquake Faults**

Prado Basin is near the Whittier-Elsinore fault zone which includes the Whittier, Elsinore, Chino, and Central Avenue faults. Both the Chino and Central Avenue faults pass through southwest Prado Basin. Prado Dam is approximately 27 miles (43 kilometers) from the San Andreas Fault Zone. Post-earthquake stability analysis conducted for the Prado Dam and Spillway indicated that the embankment and foundation materials for those structures would have sufficient strength to preclude instability when subjected to either the regional (8+ magnitude) or local (6.5-7.0 design earthquakes).

The 2010 *SEIR* identified major geology and soil constraints within the Chino Basin; however, mitigation was identified to control seismic hazards, subsidence hazards and liquefaction hazards from implementing Peace II Project. Based on a lack of any habitable structures being installed as part of this project, the potential for real geotechnical hazards to affect the proposed project or the project to expose humans to such impacts is very low regardless of the mitigation.

### **3.2.2 Significance Threshold**

A significant impact would occur if the proposed project:

- Significantly increases wind or water erosion of soils or loss of topsoil, either on or off site.
- Significantly alters the physical or chemical quality of sediments or soils.
- Triggers or accelerates geologic processes such as erosion or sedimentation brought about by disturbance of landforms.

### **3.2.3 Alternative Analysis**

#### **3.2.3.1 No Action Alternative**

There would be no change to the area's current soil or geological conditions. Sediment removal related to normal operations and management activities of the Basin would continue to occur as necessary. No additional foot or vehicular traffic is anticipated. Current seismic activity, earthquake fault zones, areas of liquefaction, and soil types would remain unchanged.

#### **3.2.3.2 Preferred Alternative**

Under the Preferred Alternative to install nine groundwater-level monitoring wells at five locations, there would be no impact on the existing soil stability, topography and landform, because the area's topography is generally flat. Sedimentation rates would continue unchanged in the area. Current seismic activity, earthquake fault zones, areas of liquefaction, and soil types would remain unchanged.

#### **3.2.3.3 Relocation Alternative**

Under the Relocation Alternative, installation of groundwater level monitoring wells would occur at alternative locations not on Corps property and there would be no impact to Federal lands.

### **3.3 HYDROLOGY/WATER QUALITY**

#### **3.3.1 Existing Conditions**

##### **Precipitation**

The Chino Basin has a semi-arid Mediterranean climate. Precipitation is a major source of local groundwater recharge for the Basin and thus, the availability of this recharge can be understood by analyzing long-term precipitation records. Four precipitation stations in the Basin were used to characterize the long-term precipitation patterns in the Basin. The long-term average annual precipitation for these stations is 17.8 inches (1900 through 2008). The ratio of dry years to wet

years is about three to two: thus, for each ten years, about six years will have below-average precipitation, and four years will have greater-than-average precipitation.

### **Surface Water**

The Basin is traversed by a series of ephemeral, intermittent and perennial streams that include: Chino Creek, San Antonio Creek, Cucamonga Creek, Deer Creek, Day Creek, Etiwanda Creek and San Sevaine Creek.

The principal drainage course through the Chino Basin is the Santa Ana River. It flows 69 miles across the Santa Ana Watershed from its origin in the San Bernardino Mountains to the Pacific Ocean. The Santa Ana River enters the Basin at the Riverside Narrows and flows along the southern boundary of the Basin to the Prado Flood Control Reservoir where it is eventually discharged through the outlet at Prado Dam and, from the Dam, the River flows the remainder of its course to the Pacific Ocean.

### **Groundwater**

The Chino Basin is one of the largest groundwater basins in southern California and is an integral part of the regional and statewide water supply system. The *OBMP PEIR* provide an estimate of groundwater in storage of about 5,000,000 acre-ft of water in the Basin and an unused storage capacity of about 1,000,000 acre-ft. More recent work by Wildermuth Environmental Inc. indicates the actual groundwater volume stored in the Basin may be 6,000,000 acre-ft or greater. Cities and other water supply entities produce groundwater for all or part of their municipal and industrial supplies; and, approximately 300-400 agricultural users produce groundwater from the Basin.

Prior to 1978, the Basin was in overdraft and since then, the Basin has been operated as described in the 1978 Judgment in Chino Basin Municipal Water District vs. City of Chino et al. (Chino Judgment or Judgment) and the OBMP.

### **Water Quality**

The Santa Ana River floodplain's hydrology and water quality in the vicinity of Prado Basin is directly influenced by the quality of inflows into the Basin including several tributaries (Cucamonga/Mill Creek, Chino Creek, Temescal Wash); rising groundwater, municipal sewage effluent and non-point discharges from agricultural and urban runoff. Water quality of the inflows is variable and elements of concern include Total Dissolved Solids (TDS), nitrates, iron, and manganese. A potential exists for cadmium, lead, mercury, polychlorinated biphenyls (PCB's), and lindane, to accumulate in freshwater organisms in the Santa Ana River. This is because anaerobic conditions may contribute to release from sediments of these trace substances. Local nuisance conditions such as algal blooms and mosquito breeding can also occur and may be exacerbated by long periods of water storage, especially during summer months when higher temperatures facilitate stratification and anaerobic conditions.

Since approximately 2000, two land use trends have extensively modified land uses in the Basin. Throughout the Basin, *urbanization* progressed rapidly, including substantial changes in the southern portion of the Basin in areas annexed by the City of Chino and City of Ontario, San Bernardino County and in the Riverside County portion of the Basin. *Agricultural uses*, particularly dairies, are gradually being removed from the southern portion of the Chino Basin and are being replaced with suburban uses, primarily residential subdivisions.

Chino Basin groundwater is not only a critical resource for water producers; it is a critical resource to the entire Santa Ana Watershed. From a regulatory perspective, the use of Chino Basin groundwater to serve potable demands is limited by drinking water standards and groundwater basin water quality objectives, and Santa Ana River water quality objectives.

### **Flood Hazards**

Due to high evaporation and percolation rates associated with the surrounding soils and the climate, runoff from normal rainfall generally soaks into the ground quickly if it falls on permeable surfaces. However, during abnormally intense rainfall, localized flooding may occur with stormwater collecting in slight topographic lows or along streets due to the limited capacity of storm drains and collection systems and before being conveyed into regional stormwater facilities. According to FEMA Flood Insurance Rate Map panels, many of the proposed monitoring well sites are located within areas of potential flood hazard; however, the monitoring wells are not sensitive to potential flooding in Prado Basin because of the construction methods and measures used for future operation and maintenance (the current proposal is also under a review/approval process, by Corps engineer staff).

The Corps utilizes a formal plan to address actions to be taken during emergency situations at the Dam resulting from earthquakes, large floods, or security alerts. This *Emergency Action and Notification Sub-plan for Prado Dam* prescribes notifications necessary for: 1) prompt evacuation of downstream residents; 2) ensuring safety; 3) vacating project areas where emergency operations may be conducted; and 4) coordination with Federal agencies and non-Federal units of government.

Hydrology and water quality issues are addressed in the 2010 SEIR, Subchapter 4.3. Due to the fact that the proposed project does not include human occupancy structures and the proposed wells will be placed below the ground surface, no adverse flood-related impacts are forecast to occur due to project implementation. The proposed monitoring well project has no potential to make a cumulatively considerable exposure to or addition to flood hazards.

### **3.3.2 Significance Threshold**

A significant impact would occur if the proposed project:

- Substantially alters the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in substantial increase in erosion or siltation on or off site.
- Substantially alters the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, in a manner that would result in a substantial reduction in the quantity of surface water.
- Substantially alters the existing drainage pattern of the site or area, including the alteration of the course of a stream or river, or substantially increases the rate or amount of surface runoff in a manner that would result in flooding on or off site or provide substantial additional sources of polluted runoff.
- Increases substantial erosion or sedimentation in relation to existing conditions.

### **3.3.3 Alternative Analysis**

#### **3.3.3.1 No Action Alternative**

There would be no change to surface or ground water conditions in the area. However, without the groundwater wells as proposed, no new hydrologic information would be gained so the project's Purpose would not be achieved. The desired outcome as proposed in the Preferred Alternative, which could be used for to benefit groundwater quality, would be postponed until an unknown future time, and local groundwater quality could suffer.

#### **3.3.3.2 Preferred Alternative**

The installation of groundwater level monitoring wells would have no impact on surface or groundwater. There is additional benefit to the Chino Basin and Prado Basin by monitoring changes in groundwater levels overtime and in better understanding groundwater quality issues at this location.

#### **3.3.3.3 Relocation Alternative**

The installation of groundwater level monitoring wells would occur, but at alternate locations and not on Corps property, and still have no impact on surface or groundwater. There could be additional benefit to knowledge of the Chino and Prado Basins by monitoring changes in groundwater levels over time.

## **3.4 AIR QUALITY**

### **3.4.1 Existing Conditions**

The climate of the Chino Basin has characteristics similar to that of the Mediterranean region: warm dry summers and moderately cool winters with temperature records ranging from the low 20's° F in the winter, to well in excess of 100° F in the late summer.

The California Air Resources Board (CARB) coordinates and oversees state and Federal air pollution control programs in California, oversees activities of local air quality management

agencies, and maintains air quality monitoring stations throughout the state in conjunction with the US Environmental Protection Agency (EPA) and local air districts.

The area of the Proposed Action is part of the central, South Coast Air Basin (SCAB). SCAB is currently in attainment for SO<sub>2</sub>, NO<sub>2</sub>, and is in non-attainment for PM<sub>2.5</sub>, PM<sub>10</sub>, CO<sub>2</sub>, 1-hour ozone, and 8-hour ozone per EPA's National Ambient Air Quality Standards (NAAQS). The SCAB is a coastal plain with connecting, broad valleys and low hills, bounded by the Pacific Ocean on the southwest and high mountains on the north, east, south, and west, in the semi-permanent high-pressure zone of the eastern Pacific Ocean which results in a mild, Mediterranean-type climate characterized by warm, dry summers, mild winters with infrequent rainfall, light winds, and frequent early morning clouds/fog that turn to hazy afternoon sunshine. Inland areas such as Prado Basin have hot summer afternoons, low rainfall, and little fog or cloud cover. Annual temperatures average 76 deg F and annual rainfall varies from nine inches (Riverside) to 14 inches (downtown Los Angeles).

Due to low average wind speeds, the SCAB has a limited capability to horizontally disperse air pollutants. In areas of topographical restriction such as the Santa Ana River Valley and foothills canyons, airflow is constricted and accelerates into stronger daytime winds. During the summer, temperature inversion layers occur and may persist until late afternoon. Low mixing heights and wind speeds typically combine to produce the highest concentrations of wind-borne pollutants.

Air pollutants are classified as either primary or secondary pollutants, depending on how formed. Primary pollutants are emitted directly from a point source into the atmosphere, and include CO, NO<sub>x</sub>'s, SO<sub>2</sub>, particulates, and various hydrocarbons. Secondary pollutants, which represent the major air quality problem SCAB-wide, are created over time in the air mass, by chemical and photochemical reactions that often involve primary pollutants, such as O<sub>3</sub> and photochemical aerosols.

The SCAB previously was in non-attainment for all Federal ambient air quality standards except SO<sub>2</sub> but is now defined as in attainment for NO<sub>2</sub>, lead, and SO<sub>2</sub> and CO approaching attainment. PM<sub>10</sub> (particulates) and O<sub>3</sub> (ozone) are still beyond attainment levels.

Primary source of pollutants in the SCAB is motor vehicles, whose emissions account for over 90% of the total CO. The primary source of automobile emissions/pollutants in the study area is from traffic on SR-91, SR-71, and SR-83, each of which passes through or within Prado Basin. A related problem concerns pollutants (particularly O<sub>3</sub> and particulates) which are transported from upwind vehicular sources in Los Angeles and Orange counties.

Odor emissions are prevalent in the area, although less so now that many acres of dairy land have been converted to housing developments. The dairy activities produce highly noticeable

odors of methane gas and ammonia generated from waste and manure from livestock pens, barns, and pastures.

Potentially sensitive receptors locally include new housing developments and rural residences and farms, as well as the California Institute (Prison) for Women.

Air quality background circumstances have changed substantially since the 2000 *OBMP PEIR* was prepared. Specifically, background air quality has changed over the past eight years; State and Federal ambient air quality standards for particulate matter (PM10 and PM2.5) and ozone have been revised; greenhouse gas emissions [carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>)] and climate change have been identified as emissions of concern; and the emission forecast model used by the South Coast Air Quality Management District (SCAQMD), URBEMIS, has been updated and local significance thresholds have been established by SCAQMD to further refine the potential air quality impact forecast of projects within the SCAB. As a result, a new air emission forecast is needed to update the air quality impacts of continuing to implement the OBMP and the new Peace II programs.

### **Greenhouse Gas Emissions**

Greenhouse gases are compounds in the atmosphere that absorb infrared radiation and reradiate a portion of that back toward the earth's surface, thus trapping heat and warming the earth's atmosphere. The most important naturally occurring greenhouse gas (GHG) compounds are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), ozone, and water vapor. CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O are produced naturally by respiration and other physiological processes of plants, animals, and microorganisms; by decomposition of organic matter; by volcanic and geothermal activity; by naturally occurring wildfires; and by natural chemical reactions in soil and water. Ozone is not released directly by natural sources, but forms during complex chemical reactions in the atmosphere among organic compounds and nitrogen oxides in the presence of ultraviolet radiation. While water vapor is a strong greenhouse gas, its concentration in the atmosphere is primarily a result of changes in surface and lower atmospheric temperature conditions.

### **Climate Change**

Climate change is a shift in the average weather patterns observed on earth, which can be measured by such variables as temperature, wind patterns, storms, and precipitation. Scientific research to date indicates that observed climate change is most likely a result of increased emission of GHGs associated with human activity. If California were a country, it would rank between the 12th and 16th largest emitters of CO<sub>2</sub> in the world.

Climate change is expected to exacerbate air quality problems and adversely affect human health by increasing heat stress and related deaths; increase the incidence of infectious diseases, asthma and respiratory health problems; cause sea level rise threatening urban and natural coastal areas; cause variations in natural plant communities affecting wildlife; and cause variations in crop quality and yields. Climate change is also expected to result in more extreme

weather events and heavier precipitation events that can lead to flooding as well as more extended drought periods.

### **3.4.2 Significance Threshold**

Impacts would be considered significant if the alternative:

- Violates state and/or Federal air quality standards.

There could be significant impacts caused by climate change if the proposed project:

- Increases heat stress and related deaths.
- Increases the incidence of infectious diseases, asthma, and respiratory health problems.
- Causes variations in natural plant communities affecting wildlife.

Per Section 176(c) of the Clean Air Act Amendments (CAAA) of 1990, the Corps must make a determination of whether the proposed project (i.e. Proposed Action) "conforms" to the State Implementation Plan (SIP). If the total direct and indirect emissions from the proposed project are below the General Conformity Rule *de minimis* emission thresholds, the proposed project is exempt from performing a comprehensive Air Quality Conformity Analysis, and would be considered to be in conformity with the SIP.

### **3.4.3 Alternative Analysis**

#### **3.4.3.1 No Action Alternative**

Air quality would continue to be influenced by climatic conditions and local and regional emissions from mobile and stationary sources. No additional pollutant or particulate materials would be produced.

#### **3.4.3.2 Preferred Alternative**

The proposed monitoring well project would emit air pollutants during well construction but no operational emissions will be generated. All daily emissions for monitoring well construction are well below the regional significance thresholds, but when two wells are being drilled per day, the nitrogen oxide (NO<sub>x</sub>) emissions rise above the regional threshold. However, the proposed monitoring wells will be drilled using a Tier 3 drilling rig, which reduces the NO<sub>x</sub> emissions by approximately 68 percent. Thus, two monitoring wells can be under construction on a daily basis without exceeding the SCAQMD regional significance thresholds. Based on information presented in this analysis and in the 2010 SEIR, the proposed monitoring well project modifications have no potential to make a cumulatively significant contribution to air quality degradation.

#### **3.4.3.3 Relocation Alternative**

The Relocation Alternative would emit the same air pollutants and have the same impact as the Preferred Alternative during well construction, and still would not generate any operational

emissions. As above, the equipment used would allow less than significant adverse impacts. This alternative proposal would not occur on Federal land.

### **3.5 NOISE**

#### **Noise Factors**

Noise can be defined as unwanted sound or combination of sounds that may interfere with conversation, work, rest, recreation, and sleep, or in the extreme may produce physiological or psychological damage. Sound travels from a source in the form of wave, which exerts a pressure on a receptor such as a human ear. The amount of pressure a sound wave exerts is referred to as sound level, commonly measured in decibels (dB). As a reference, a sound level of zero dB corresponds roughly to the threshold of human hearing, and a sound level in the range of 120 to 140 dB can produce human pain.

Wildlife may be sensitive receptors to noise and vibrations. Animals rely on meaningful sounds for communication, navigation, avoiding danger, and finding food. Noise may be defined for wildlife as "any human sound that alters the behavior of animals or interferes with their functioning". The level of disturbance may be qualified as damage, which may harm health, reproduction, survivorship, habitat use, distribution, abundance or genetic distribution, or disturbance which causes a detectable change in behavior. Behavioral and physiological responses of wildlife to noise have the potential to cause injury, energy loss, decrease food intake, habitat avoidance and abandonment, and reproductive losses.

#### **3.5.1 Existing Conditions**

Because the Proposed Action areas are not typically used for anything other than in peripheral areas of intermittent, low-impact recreation activities such as recreationists passing by, there is limited human-made noise in the immediate area. Noise from local (distant) freeways and sparse streets is limited to a low background hum, if at all, and depending on wind direction. Ambient noise levels range from over 70 dB where SR-71 Freeway passes by Prado Dam, to approximately 45 dB in quiet residential areas in the eastern Basin. Due to the location of State Routes (SR-71, SR-91, and SR-83), noise levels are generally much higher along the Basin's periphery and then drop off to quieter levels in the more central, rural Basin regions such as the proposed Action areas. Significant existing noise sources include the SR's 71, 91, 83 freeways; aircraft noise from Chino and Corona Municipal Airports; and rail traffic from the Atchison Topeka and Santa Fe (/Burlington Northern and Santa Fe) Railroad line which runs east-west in the extreme southern Basin.

#### **3.5.2 Significance Threshold**

A significant impact would occur if the proposed project:

- Results in Federal, state, or local noise standard levels being exceeded significantly during implementation.

- Results in noise level ranges above the ambient noise level range which characterizes the Basin.
- Produces noise levels that would result in abandonment of bird nests.

**3.5.3 Alternative Analysis**

**3.5.3.1 No Action Alternative**

There would be no change in local noise levels, because no groundwater level monitoring wells would be installed. No significant adverse impact.

**3.5.3.2 Preferred Alternative**

Noise would be generated by well construction activities (see table below). The noise levels would be the same at each location where the monitoring wells will be installed. The noise issue was evaluated in Appendix 8.1 of the 2010 SEIR and both long- and short-term noise impacts were concluded to less than significant with implementation of the pertinent 13 noise mitigation measures.

Four (4) out of the proposed five (5) monitoring well sites, on Corps property, are potentially near sensitive species (ie. Least Bell’s Vireo) depending on actual breeding locations from year to year. While the original proposal would have seen 5 locations’ construction implemented during any time of year and would have required a certified biologist be required on each of these sites at the startup of construction to ensure that no sensitive species permanently abandon their territories due to noise from the drill rig, the present proposal shall be scheduled to avoid the nesting season and habitat shall not be affected by the temporary construction.

Rig	Model	Distance (feet from Rig)	Noise Levels (decibels)
CPT	C15	10	88
		50	65
		100	60
MW	Marl M10	10	82
		50	70
		100	66

There would be no long-term noise emissions from monitoring the monitoring wells. Thus, even though some short-term, construction noise would be generated, it would not result in cumulatively significant noise impacts. No new or significant adverse direct or cumulative noise impact would result from implementing the Preferred Alternative.

**3.5.3.3 Relocation Alternative**

Noise would be generated by well construction activities (see table above), at alternative sites as well. The noise levels would be the same as that at each of the locations where the monitoring

wells will be installed. As above, the noise issue was evaluated in the 2010 SEIR and both long- and short-term noise impacts were concluded to be less than significant with implementation of the pertinent 13 noise mitigation measures. The Relocation Alternative would cause the monitoring wells to be installed at locations off Corps-controlled land and far from the potential sensitive species areas or other sensitive receptors.

### **3.6 BIOLOGICAL RESOURCES**

#### **3.6.1 Existing Conditions**

##### **Background Conditions**

The Chino Basin includes urban, agricultural, industrial, flood control, habitat conservation and vacant land uses. The project area is located on coalescing alluvial fans from ancient flood flows from the San Gabriel and San Bernardino Mountains to the north and east.

Historic development activities have removed native habitat from many portions of the project area, but sensitive biological resources remain on limited areas of undeveloped and fallowed lands. In particular, significant biological resources within the project area are associated with the Prado Basin (the largest remaining wetland in southern California), the Santa Ana River floodplain and other drainages, remnant sand dunes, the Jurupa Mountains, remaining undeveloped portions of alluvial fans, and the foothills of the San Gabriel Mountains. The principal drainage course for the Basin is the Santa Ana River.

Additional information on Basin biological resources may be found in the Corps' draft *Prado Basin Master Plan and Environmental Impact Statement* (2005).

##### *Critical Habitat*

Critical Habitat is designated by U.S. Fish and Wildlife Service (USFWS) for some federally listed as threatened and endangered species, and critical habitat status within the Chino Basin is summarized below. Federal agencies must consult with the USFWS when the agencies determine that their actions (funding, permitting or undertaking projects) may affect designated critical habitat.

Critical habitat for least Bell's vireo and western willow flycatcher occur within the Chino Basin. Portions of the Santa Ana River in Riverside County, which support suitable habitat, were excluded from southwestern willow flycatcher and Santa Ana sucker Critical Habitat designation because those areas are within the boundaries of the Western Riverside County MSHCP.

This monitoring well proposal has been reviewed by U.S. Fish and Wildlife Service which recommended avoidance measures in areas of Critical Habitat; the measures are now incorporated within the proposal.

##### Vegetation and Wildlife

Vegetation at lower elevations of the Prado Basin is comprised of willow/riparian forest in various seral stages, *Baccharis* ('mulefat') and other riparian scrubland, freshwater ponds with emergent marsh, flowing streams and adjacent sandy washes, periodically flooded and/or fallow fields, and ruderal vegetation in highly disturbed areas. At higher elevations such as above 510 feet msl, upland habitats predominate, with minor elements of coastal sage scrub and oak woodland at the western Basin edge. Thirteen plant communities are recognizable and include: freshwater/aquatic, five riparian, and four upland (including two ruderal) communities.

Floodplain riparian communities dominate the Basin with upland habitats primarily restricted to perimeter areas. An estimated 311 species of plants representing 65 families of vascular plants have been identified in the Prado Basin and surrounding areas. Approximately 32% (99 species) are associated with floodplain and riparian habitats; 64% (200 species) found on slopes and upland; and 4% (12 species) found in both riparian and upland communities. About 100 species are non-natives, a small number of which are remnants of previous cultivation in the area. A small number of riparian woodland species (especially Goodding's black willow) are responsible for much of the Basin's plant cover. The dominant plant communities are: willow woodland, mostly below 510-ft; and upland ruderal and agricultural communities, mostly above the 510-ft line.

The Basin's wildlife resources are unique because the continuous, riparian woodland network supports a number of rare and declining species, especially riparian-dependent birds. At least 15 fish species are found within the Santa Ana River and its three tributaries (Chino, Cucamonga, and Temescal Creeks). Two species, the Santa Ana sucker and the Arroyo chub, are native to southern California. The two most abundant fish species are the flathead minnow and mosquito fish which, with the carp (*Cyprinus carpio*) comprise about 95% of all fish in the Basin.

Approximately seven amphibian species, including non-native anurans, and up to 13 reptile species, are known to the Basin.

Over 200 species of birds have been recorded within the Basin and of these, approximately 95-100 species breed in the Basin. Several Federally-listed species and other species of concern utilize the abundant nesting and foraging resources offered by the extensive vegetative cover. A substantial raptor population resides within the Basin, including eleven breeding species. Shorebirds include breeding species as well as vagrants. Upland species frequent grasslands as well as eucalyptus groves.

Twenty- three species of mammals, including three non-natives, and seven carnivore species, have been observed in the Prado Basin.

In some areas, the Basin serves purposes of wildlife refugia, and/or corridors which link areas of suitable wildlife habitat and allow movement during dispersal, seasonal migration, and home range activities such as forage and breeding.

### **Groundwater Level Monitoring Well Location Conditions**

The proposed well sites are all situated in disturbed or semi-urbanized settings. There may be sensitive species, such as least Bell's vireos, and sensitive (riparian) habitat near several proposed well locations but these resources would not be directly impacted with the proposal, due to avoidance and minimization methods. The temporary construction work is planned to be conducted outside the nesting season and also would be conditioned so as not to directly impact sensitive species' habitat. Operation and maintenance of the wells, in a case-by-case basis, would remain subject to the Endangered Species Act, NEPA, and other related environmental laws.

#### **3.6.2 Significance Threshold**

Impacts to biological resources are considered to be significant according to CEQA Guidelines (§15064 and Appendix G) if the direct, indirect or cumulative effects of the proposed 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.
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the CDFG or USFWS.
- 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.
- 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.
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

#### **3.6.3 Alternative Analysis**

##### **3.6.3.1 No Action Alternative**

There would be no change in the trend or status of existing biological resources, because no groundwater level monitoring wells would be installed.

##### **3.6.3.2 Preferred Alternative**

A current Biological Resources report for the proposed monitoring well sites located on Federal land was created in accordance with Mitigation Measure 4.4-1 of the 2010 *SEIR*. A finding of the proposal's original, 2010 *SEIR* is that no sensitive habitats or sensitive species located within the areas that would be temporarily or permanently disturbed by installing the monitoring wells. Mitigation measures that will be implemented in conjunction with the proposed project include measures 4.4-4, 4.4-5, 4.4-7, and 4.4-8, as described in Section 4 below.

### **3.6.3.3 Relocation Alternative**

The Relocation Alternative would cause proposed monitoring wells to be installed at locations far away from Chino and Mill Creek(s) and from the potential, sensitive, riparian species. Therefore, mitigation measures already identified would not be required to reduce biological impacts to insignificance.

## **3.7 CULTURAL RESOURCES**

### **3.7.1 Existing Conditions**

Records on file at the Archaeological Information Center (AIC) and Eastern Information Center (EIC) indicate that over 75% of the total acreage within a half-mile radius of the nine proposed well sites was previously surveyed for cultural resources. The Prado Basin area has been extensively studied over the past few decades; many of the previous studies were conducted in association with flood-control projects initiated by the U.S. Army Corps of Engineers and are referenced in the draft *Prado Basin Master Plan* (2005). These and similar studies reveal a rich cultural landscape in the Prado Basin area, where some 60 historical/archaeological sites have been identified within the scope of the records search.

Among the previously reported prehistoric—e.g., Native American—cultural resources is the Prado Basin Archaeological District, which measures approximately 5 miles long and 3.75 miles wide at the maximum, and encompasses 22 recorded prehistoric sites ranging from 0.33 acre to 17.5 acres in size. Each of the 5 proposed Prado well locations fall within the boundaries of this archaeological district. The 22 recorded sites in the District include habitation areas, camps and field camps, food procurement and processing areas, and lithic reduction areas. While some sites were recorded on the basis of scant assemblages of ground stone and chipped-stone artifacts found on the ground surface, others contained extensive surface finds and deep, multi-layered subsurface deposits. Among the artifacts discovered were projectile points, bifaces, scrapers, flakes, graters, choppers, cores, flakes, hammerstones, manos, metates, mullers, pestles, mortars, cogstones, bone tools, stone and shell beads, bone fragments, shells, ecofacts, charcoal, and fire-affected rock. Archaeological testing was carried out on 13 of the 22 sites during several studies between 1983 and 1986, and all of the sites yielded subsurface artifacts of varying quantities.

Elsewhere within the half-mile scope of the records search, previously recorded cultural resources also included some three dozen sites that dated to the historic period. These sites represented ranches, farmsteads, dairies, and water conveyance features, many of which have since given way to residential and commercial development, along with a handful of refuse deposits. One large multi-component site, CA-RIV-653/H, consisted of a prehistoric village site within the Prado Basin Archaeological District as well as the Bandini-Cota Adobe, which is listed in the National Register and designated a Point of Historical Interest (State of California 1969; Wood 1973). Also found within the scope of the records search were a small number of prehistoric sites outside the Prado Basin Archaeological District, consisting mostly of lithic scatters, and four isolates—i.e., localities with fewer than three artifacts.

### **3.7.2 Significance Threshold**

A significant impact would occur to cultural resources if the proposed project:

- Alters the characteristics of a property that may qualify for inclusion in the National Historic Register. For the purpose of determining effect, alteration to features of a property's location, setting, or use may be relevant depending on a property's significant characteristics and should be considered.
- Introduces visual, audible, or atmospheric elements that are out of character with the property or alters its setting.

### **3.7.3 Alternative Analysis**

#### **3.7.3.1 No Action Alternative**

The No-Action alternative would not affect historic or cultural resources.

#### **3.7.3.2 Preferred Alternative**

None of the proposed monitoring well sites have been previously surveyed for cultural resources. However, CRM TECH performed both a records search and site evaluation for all proposed well locations and a Corps archaeologist is performing cultural review, and coordination with the SHPO, of the proposed construction project.

According to CRM TECH's research, over 75 percent of the total acreage within a one-half mile radius of the nine sites has been surveyed for cultural resources: *"The field survey of the well sites encountered no buildings, structure, objects, sites, features, or artifacts more than 50 years of age. The well sites are situated near residential or commercial properties, in agricultural fields, or within the Prado Basin Park or the Prado Regional Park, and the ground surface has typically experienced some disturbance in the past. Using GPS information, [researchers] Hogan and Ballester confirmed that none of the proposed well sites coincided with known historical/ archaeological sites."* Based on this information, CRM Tech concluded that none of the well sites is within or adjacent to any known archaeological site that contributes to the significance and integrity of the district. However, *due to the potential for subsurface resources at well sites PB-1 and PB-5 through PB-9, CRM TECH recommended that the well drilling activities down to a depth of two meters be monitored when conducted.* No further cultural resource investigations are recommended for Well Sites PB-2, PB-3, and PB-4.

A Corps archaeologist will complete cultural review and coordination with the State, prior to the proposal's initiation. In addition, IEUA will implement cultural resources mitigation measures listed in section 4 of this EA.

#### **3.7.3.3 Relocation Alternative**

None of the Relocation Alternative monitoring well sites were previously surveyed for cultural resources. Based upon the CRM TECH survey, mentioned above, a similar result can be

expected at the Relocation alternative locations. For proposed alternate sites, IEUA would complete cultural resources communications with the SHPO prior to project implementation.

### **3.8 HAZARDOUS WASTE AND MATERIALS**

#### **3.8.1 Existing Conditions**

The subject proposal originates as a practical means to characterize and deal with both groundwater levels and with an existing contaminated groundwater condition, which has been described as a slow, southward groundwater flow, containing trace hydrocarbon substances, from the vicinity of Chino Municipal Airport which is located northward to and at higher ground surface elevations than the proposed well field location. The monitoring wells, as proposed, would allow greater understanding of, and may suggest treatment for, this particular problem. No additional hazmat-contaminated sites have been identified in the immediate project areas through standard assessment sources for additional investigation as HTRW sites. Hazardous or toxic materials such as oils, grease, fertilizers, or pesticides may also be or have been introduced into the Basin as a result of the use of compounds for construction, development, agricultural or vegetation management. An increase of exposure, to hazardous or toxic compounds already existing within the Basin, may result from spillage or leakage of containment units if they are inadvertently damaged through Basin activities.

#### **3.8.2 Significance Threshold**

A significant impact would occur if the proposed project:

- Caused soil contamination, including flammable or toxic gases, at levels exceeding Federal, state, and local hazardous waste limits established by 40 CFR Part 261.
- Exposed the general public to hazardous situations through the transport, use, storage, or disposal of hazardous materials.
- Created a significant hazard to the public or environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.
- Caused mobilization of contaminants, creating potential pathways of exposure to workers, the public or other sensitive receptors to contaminated or hazardous materials and such exposure exceeds permissible exposure levels set by the California OSHA in CCR Title B, and Federal OSHA in Title 29 CFR Part 1910.

#### **3.8.3.1 No Action Alternative**

If the subject proposal were not implemented, then baseline conditions regarding hazardous and toxic materials usage, and the generation, storage, and disposal of hazardous and toxic wastes, in the Basin would continue as at present into the foreseeable future. Any sites requiring additional investigation may continue to pose threats to the human environment if they are not investigated. Existing groundwater conditions would remain the same, or could worsen, but would not likely improve without further study and intervention.

### **3.8.3.2 Preferred Alternative**

No activities are proposed under the subject proposal that would significantly increase the likelihood of levels of hazardous or toxic substances being released into the Basin. Corps policy as well as State and Local policies guide the management of and response to spills of oils, grease, and other compounds that could be introduced into the Basin as a result of typical maintenance procedures. Due to the nature of this construction proposal, there is extremely low potential for hazmat substances to be introduced to the environment. Additional mitigation measures are unnecessary, to reduce hazmat impacts to insignificance.

### **3.8.3.3 Relocation Alternative**

Similar potential hazards may apply to the Relocation Alternative, which would be located off of Federal lands. Mitigation has been incorporated into the well drilling contract to control any accidentally-released hazardous substances during construction. Any potential health hazards which such substances could pose when released into the environment would be effectively controlled. No additional significant adverse effects on humans are likely to result from implementing the proposed project.

#### Determination of Impacts

Hazards associated with the proposed project include a potential to accidentally spill hazardous materials during construction. Mitigation (avoidance/minimization) is incorporated into the well drilling contract to control any accidentally released hazardous substances during construction; thus, the potential health hazards such substances could pose, if released into the environment, would be effectively controlled.

The proposal would not likely create hazardous conditions nor involve the use or transport of hazardous materials when implemented, pursuant to and in accordance with standard City and State safety procedures and practices. The proposal would not interfere with emergency response plans.

No new, significant adverse effects on humans or the human environment would be likely to result from implementing the proposed project.

The No Action alternative may be likely, from continued inaction, to contribute to risk of future and wider groundwater contamination at Prado Basin and elsewhere.

## **3.9 AESTHETIC RESOURCES**

### **3.9.1 Existing Conditions**

Sensitive viewsheds may be defined as those areas visible from densely populated areas with primarily residential use, and which have unrestricted views into the Basin. Primary factors influencing views into the basin are structures, trees, and topography.

In areas including the proposed action area, parkland use is predominant with some intermittent views of sparse residential or agricultural areas. Wider views of the Prado Basin are partially obscured by structures, trees, and some relief in topography. The area's topography is relatively flat. Major visual features include the Santa Ana River, Chino Creek, Mill Creek and Prado Dam. The Santa Ana River, Chino Creek and Mill Creek are all natural/soft bottom waterways that may lie somewhat adjacent to the Proposed Action area (proposed well locations).

### **3.9.2 Significance Threshold**

A significant impact would occur to aesthetic resources if the proposed project:

- Created direct, permanent changes to important existing scenic characteristics of a landscape that is viewed by a large number of viewers.
- Impairs or obstructs views of major visual elements

### **3.9.3 Alternative Analysis**

#### **3.9.3.1 No Action Alternative**

There would be no change to aesthetics in these parkland areas, as no project would be implemented.

#### **3.9.3.2 Preferred Alternative**

The proposed well sites are spread over several miles of area in Prado Basin. When completed, the monitoring wells would have minimally-observable well-head features above the ground. Aesthetic issues were determined, in the 2010 *SEIR*, to be mitigable to a less than significant impact. The construction activities associated with installation of the wells may temporarily affect up to one-half acre at each well site.

At proposed monitoring well locations PB-1, Pb-6, Pb-7 and PB-9, mitigation measure I-1 shall be implemented. This would include spreading appropriate native plant seed over the area in the late fall or early winter, or replacement of any disturbed landscaping, as needed. With implementation of this measure, no long-term visual changes that would affect humans would result from implementing the proposed project. For proposed monitoring wells PB-8, mitigation measure I-1 does not need to be implemented due to the degree of disturbance at the well site. Thus, both the adopted and proposed project aesthetic impacts would be non-significant without mitigation. No additional adverse aesthetic effects to humans would result from implementing the proposed project.

#### **3.9.3.3 Relocation Alternative**

The Relocation Alternative well sites are spread over several miles of area, off of Corps controlled land in the Prado Basin. When completed, the monitoring wells would have minimal well-head features visible above the ground. With implementation of mitigation measures, no long-term visual changes that will affect humans will result from implementing the proposed project.

Thus, both the adopted and proposed project aesthetic impacts will be non-significant without mitigation. No additional adverse aesthetic effects to humans will result from implementing the proposed project.

### **3.10 RECREATION RESOURCES**

#### **3.10.1 Existing Conditions**

The Basin's undeveloped open-space lands contain considerable acreage of largely ruderal habitat, dominated by non-native vegetation. A variety of recreation amenities are available within Prado Dam Basin and include golf courses, park land, a sports center, baseball fields, a garden center, model airplane field, trails for hiking/jogging, bicycle trails, a recreation lake, and soccer fields. For more information, please refer to the draft *Prado Dam Basin Master Plan* (Corps 2005).

In the area of the Proposed Action, only one formal recreation amenity would be affected, and this within a general area currently leased for outdoor recreation at Prado Regional Park, San Bernardino County, CA. The proposal would take place within Park areas, adjacent to Well PB-3, near a parkway/ trail that is used by walkers and joggers.

Access is available to Well PB-9 via a maintenance road. Because the area near this well is a Corps maintenance area and not specifically open for recreation, no recreation amenities would be affected for this well's construction or maintenance.

#### **3.10.2 Significance Threshold**

A significant impact would occur if the proposed project:

- Disrupted or limited access to recreation and/or open areas.
- Resulted in construction or operational activities that substantially conflict with recreational uses.

#### **3.10.3 Alternative Analysis**

##### **3.10.3.1 No Action Alternative**

The No-Action alternative would not affect existing open space or recreation areas. However, groundwater conditions as well as future surface water conditions could be affected if the No Action alternative is implemented.

##### **3.10.3.2 Preferred Alternative**

Recreation use of the parkway/trail immediately at PB-3, by walkers and joggers, would be impacted for a short time during the installation of the groundwater level monitoring level. The entrance to the parkway/trail would be utilized by work crews and the area would be considered a construction zone, requiring hard hats, safety vests, and steel-toed boots. This temporary impact would be moderated by adequate Detour and other Safety provisions to be coordinated with Park staff. The proposal would result in no significant adverse effects to recreation at Prado Basin.

### **3.10.3.3 Relocation Alternative**

The Relocation Alternative is offsite and would not impact recreation or other resources, due to the proposed locations and to avoidance and minimization measures which are designed to allow recreationists safe passage and wide latitude around a concentrated construction area.

## **3.11 PUBLIC HEALTH AND SAFETY**

### **3.11.1 Existing Conditions**

#### **Safety**

Public health and safety measures are intended to protect the public, to maintain public services, to ensure compliance with applicable Federal and state laws, to prevent waste contamination and to minimize hazards resulting from actions on Corps-managed lands and amenities.

The region is usually dry, but heavy rainfall has resulted and may result in flooding throughout the Basin. In the event of flooding, hazards could occur both within and downstream of the Basin. City of Chino's Pine Avenue and Chino-Corona Road are closed when there may be danger of flooding near Chino and Mill Creeks. These major roads are used daily by the public. On occasion, vehicles have been stranded due to flooding before roads were closed. Alternative access is available for all public services.

#### **Wildfires**

Wildland vegetated areas with large stands of dry vegetation are susceptible to local uncontrolled wildfire events. Even moderate burns can quickly eradicate vegetation and ground cover, leaving the area susceptible to greater erosion by rain storms and wind.

#### **Mosquitoes**

Several species of mosquitoes in California are known to transmit agents that cause mosquito-borne diseases including western equine encephalomyelitis, St. Louis encephalitis, malaria, and West Nile virus. Within an urban environment, the lack of many of the natural predators can enable mosquitoes to reach nuisance levels and the potential for the spread of mosquito-borne diseases can increase without monitoring and abatement measures.

Mosquitoes breed in stagnant or standing water and especially during the summer, following spring when local water treatment ponds are filled or standing water has persisted from earlier

rains. If not managed properly, detention basins and wetlands can become breeding sites. Mosquito control methods generally include use of biological (mosquito fish) and chemical insecticides (spraying) and is the responsibility of San Bernardino County Vector Control.

### **3.11.2 Significance Threshold**

A significant impact would occur if the proposed project:

- Increases exposure of people or structures to flooding hazards.
- Creates conditions that would present potential dangers to the public or attract the public to a potentially hazardous area (e.g., attractive nuisances).
- Does not use herbicides per recommended manufacturer's instructions and general standards of use. An example of such standards is restricted application before and after rainstorms.
- Creates mosquito breeding conditions in an amount that would require increased levels of mosquito abatement programs to maintain mosquito populations at pre-project levels.

### **3.11.3 Alternative Analysis**

#### **3.11.3.1 No Action Alternative**

The No-Action alternative would not affect general public health and safety regarding the above parameters. However, no action taken to monitor the status of groundwater could lead to future water quality problems affecting public safety.

#### **3.11.3.2 Preferred Alternative**

Public safety and service impacts, relating to the proposed monitoring wells project, were determined (*Appendix 8.1 of the 2010 SEIR*) to be less than significant, for the following reasons:

The proposed monitoring well project does not make substantial demand on any public services.

Demand for emergency services may occur but this is a random requirement and does not rise to level of significant impact.

During construction, a potential may exist for accidents, trespass, and theft of equipment and material. However, normal access controls for construction staging areas and safety requirements for contractors were concluded to be sufficient to control this potential impact.

No additional direct adverse impact or cumulative demand for public safety and services would result from implementing the proposed project.

#### **3.11.3.3 Relocation Alternative**

The Relocation Alternative does not make substantial demands on public services. During construction, a potential exists for accidents, trespass, and theft of equipment and material. However, normal access controls for construction staging areas and safety requirements for

contractors are to be sufficient to control this potential impact. Demand for emergency services may occur but this is a random requirement and does not rise to level of significant impact.

No additional direct adverse impact or cumulative demand for public services will result from implementing the Preferred Project.

### **3.12 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE**

Each Federal agency is required, by Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, to "make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations...."

The Council on Environmental Quality (CEQ) defines a minority population as any group of minorities that exceeds 50% of the existing population within the market area or where a minority group comprises a meaningfully greater percentage of the local population than in the general population. Additionally, the CEQ identifies low income using 2000 Census data for "individuals living below the poverty level."

Ensuring environmental justice means protecting existing local and market-area minority and low-income populations from disproportionate adverse human health or environmental effects related to Federal government action.

#### **3.12.1 Existing Conditions**

The Prado Basin is in the westernmost corners of Riverside and San Bernardino Counties, in jurisdictional boundaries of the Cities of Norco, Chino, Chino Hills, and Corona. Much of the Basin included unincorporated areas of San Bernardino and Riverside Counties.

The 2010 Census reported that the Chino area has a population of 77,983 and a population density of 2,629.9 people per square mile (1,015.4/km<sup>2</sup>). The racial makeup of the area was 43,981 (56.4%) White; 4,829 (6.2%) African American; 786 (1.0%) Native American; 8,159 (10.5%) Asian; 168 (0.2%) Pacific Islander; 16,503 (21.2%) from other races; and 3,557 (4.6%) from two or more races. Hispanic or Latino of any race were 41,993 persons (53.8%).

The Census reported that 70,919 people (90.9% of the population) lived in households, 164 (0.2%) lived in non-institutionalized group quarters, and 6,900 (8.8%) were institutionalized. There were 20,772 households. The average household size was 3.41. There were 16,936 families (81.5% of all households); the average family size was 3.72.

During 2007-2011, the Median household income in Chino area was \$73,400 while overall in California the figure was \$61,632. Number of persons below the poverty level was 7.4% of the

local population while in California as a whole, the figure was 14.4%. Household income levels suggest more affluent communities are found south of Prado Dam or northwest of the Basin.

### **3.12.2 Significance Threshold**

Impact on socioeconomics and environmental justice would be considered significant if the following were to occur:

- Impacts to a sector of the economy, productivity, competition, prices, or jobs; impacts on the welfare of minority or low-income populations.
- The impact of project-induced population changes on the availability of public services.
- A substantial long-term decrease in local employment due to direct loss of jobs or an adverse effect on the local economy that results in an indirect long-term loss of jobs.
- Disproportionately high and adverse impacts on minorities, low-income residents, or children.
- A substantial population growth in an area induced by the project.

### **3.12.3 Alternative Analysis**

#### **3.12.3.1 No Action Alternative**

Without the implementation of the Proposed Action, there would be no effect on growth-inducing impacts that would affect local economy, housing, demographics, or service needs.

#### **3.12.3.2 Preferred Alternative**

The Preferred Alternative would have no direct effect on growth-inducing impacts that would affect local economy, housing, demographics, or service needs, as there is no authorized public use of the area. However, the installation of the groundwater level monitoring wells would be contracted to an outside source, which would create jobs and affect the local economy to some degree. There would be minimal additional non-Corps labor involved; therefore there would be no growth inducing impacts to the area, nor any impacts to environmental justice, as there would be no impact to local demographics.

#### **3.12.3.3 Relocation Alternative**

The Relocation Alternative would have no direct effect on growth-inducing impacts that would affect local economy, housing, demographics, or service needs, as there is no authorized public use of the area. There would be no impact to local demographics.

## **3.13 TRAFFIC AND TRANSPORTATION**

### **3.13.1 Existing Conditions**

The Prado Basin is located in the northeast quadrant of the intersection of Interstate 91 and U.S. Highway 71. Both freeways are operated by California's Department of Transportation (Caltrans). Access northward into the Prado Basin can be attained via main entrances along Auto Center Drive off of the 91 freeway. Access from the west and north are available from SR-71 and SR-83, mentioned earlier (*Noise Impacts, Section 3.5*).

### **3.13.2 Significance Threshold**

A significant impact would occur to transportation and traffic if the proposed project:

- Caused closure of a major roadway (arterial or collector classification) to through traffic and there would be no suitable alternative route available.
- Caused an increase in vehicle trips associated with additional commuter and truck trips resulting in an unacceptable reduction in level of service of local jurisdictions on roadways resulting in safety problems for vehicular traffic, transit operations, or trains.
- Created an increase in roadway wear in the vicinity of the work zone as a result of heavy truck or equipment movements, resulting in noticeable deterioration of roadway surfaces.

### **3.13.3 Alternative Analysis**

#### **3.13.3.1 No Action Alternative**

There would be no change to any traffic or transportation use adjacent to the area.

#### **3.13.3.2 Preferred Alternative**

Transportation/Traffic impacts were determined, in the 2010 *SEIR*, to be less than significant.

With an estimated 10 trips per day for several days at each of five locations, the proposed monitoring well project does not make substantial demand on the local or regional circulation system. All monitoring well locations are off of roadways; therefore the proposed monitoring well project has no potential to make a cumulatively considerable contribution to adverse circulation system impacts.

#### **3.13.3.3 Relocation Alternative**

Transportation/Traffic impacts were determined to be less than significant. With an estimated 10 trips per day, the Relocation Alternative does not make a substantial demand on the local or regional circulation system. The Relocation Alternative locations would be off roadways, eliminating adverse impacts to the circulation system during construction. The Relocation Alternative has no potential to make a cumulatively significant contribution to adverse circulation system impacts.

### **3.14 CUMULATIVE IMPACTS**

Pursuant to 40 CFR Parts 1500-1508, cumulative impacts of a proposed action must be assessed. A cumulative impact is an "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions" (40 CFR Part 1508.7).

The intent is to identify impacts of other past, present, and future projects that, when considered together with the Proposed Action, may significantly compound or increase

environmental impacts. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time. Infrastructure, industrial, commercial, residential, and other projects located in close proximity to the proposed mitigation site are considered to have the potential for creating cumulative impacts in association with the proposed project activity.

#### **3.14.1 Past Impacts**

The Proposed Action area is surrounded by areas that have experienced an increase in growth. The cities of Corona, Norco, Ontario, Chino, and Chino Hills have increased in population, resulting in urbanization, increased traffic, and increased demands on water and land resources. As a result of the growth and to minimize the potential for downstream flooding, the Corps has upgraded Prado Dam and the downstream flood control facilities. Construction of the flood control facilities, surrounding developments, and improved transportation facilities has contributed to the cumulative environmental impacts to the area. In addition, operation and maintenance activities of transportation and flood control facilities contribute to additional environmental impacts to resources; however, with the improved flood control facilities and access on the Corps property, the project site currently provides more functionality when compared to the conditions of the site prior to implementation of the Corps main stem project.

Cumulative impacts from the related projects that have already been completed have affected water quality, water resources, air quality, noise, and the biological environment. Development within and around the project site has increased the introduction of invasive species, pollutants, and human disturbance within the natural areas of the project site.

#### **3.14.2 Present Impacts**

The existing Corps property and flood control facility will continue to be operational with implementation of the Proposed Action. Cumulatively, the biological and cultural resources within the Proposed Action area may be most affected in the short term; however, effects from the installation of these groundwater level monitoring wells would be negligible when compared to the large-scale projects occurring concurrently.

#### **3.14.3 Future Impacts**

The Corps property and flood control facility will continue to be operational in the future even with implementation this Proposed Action. With implementation of all of the related projects, the biological environment and cultural resources will be affected; however, each approved project would include mitigation measures, as needed, to maintain the integrity of the existing environment.

Implementation of the Proposed Action would not have significant effects, nor is it likely to contribute heavily to the cumulative effects to resources within the Proposed Action area.

#### **4.0 ENVIRONMENTAL COMMITMENTS**

This section describes the environmental commitments that would be implemented as part of the Proposed Action. These commitments were developed during earlier documentation, as described in this document's **Background, Section 1.4**. Due to the limited nature of disturbance, the activities of the Proposed Action are not expected to cause any long term adverse effects. The environmental commitments discussed below would decrease the severity of any short-term or temporary project related activities on resources. These commitments as described result in avoidance and minimization measures that would reduce project impacts to insignificance.

#### **LAND USE - AGRICULTURAL RESOURCES**

**1-1** – Where a well location is proposed on locations that support agricultural operations on important farmlands, alternative sites shall be selected that do not occupy such acreage (unless agricultural operations have already been terminated). This measure is a modification to 4.2-2 from the OBMP PEIR.

#### **NOISE**

**5-2** – All construction vehicles and fixed or mobile equipment shall be equipped with properly operating and maintained mufflers. This is measure 4.11-2 from the OBMP PEIR.

**5-4** – If equipment is being used that can cause hearing damage at adjacent noise receptor locations (distance attenuation shall be taken into account), portable noise barriers shall be installed that are demonstrated to be adequate to reduce noise levels at receptor locations below hearing damage thresholds. (This is measure 4.11-4 from the *OBMP PEIR*).

**5-9** – Maintain good relations with the local community where construction is scheduled, such as keeping people informed of the schedule, duration, and progress of the construction, to minimize the public objections of unavoidable noise. Communities should be notified in advance of the construction and the expected temporary and intermittent noise increases during the construction period.

#### **BIOLOGICAL RESOURCES**

**6.4-4** – To avoid any illegal take of active bird nests, any grubbing, brushing or tree removal will be conducted outside of the State identified nesting season (nesting season is February 1 through September 1). Alternatively, project impact areas will be evaluated by a qualified biologist prior to initiation of ground disturbance to demonstrate that no bird nests will be disturbed by project construction activities.

**6.4-5** – Prior to commencement of construction activity in locations that are not fully developed, a clearance survey will be conducted by a qualified biologist to determine if any burrowing owl burrows are located within the potential area of impact. If occupied burrows may be impacted, an impact minimization plan shall be developed by the biologist that will protect the burrow in

place or provide for relocation to an alternate burrow within the vicinity but outside of the project footprint in accordance with current CDFG guidelines. Active nests must be avoided until nesting's have fledged.

**6.4-7** – Prior to commencement of construction activity within MSHCP areas in Riverside County, a consistency analysis shall be prepared and reviewed with Riverside County Regional Conservation Authority (RCA). Through avoidance, compensation or a comparable mitigation alternative, each project shall be shown to be consistent with the MSHCP.

**6.4-8** – Following construction activities within or adjacent to any natural area, the disturbed areas shall be re-vegetated using a plant mix of native plant species that are suitable for long term vegetation management, which shall be implemented in cooperation with regulatory agencies and with oversight from a qualified biologist. The seeds mix shall be verified to contain the minimum amount of invasive plant species seeds reasonably available for the project area.

### **CULTURAL RESOURCES**

**7-3** – In situations where resources are potentially subject to direct or indirect impact and testing or data recovery is not proposed, an archaeological monitor and Native American observer/consultant should be present during subsurface work. One circumstance under which this might occur would be if a known resource were close to an area of impact and the site boundaries were ambiguous. Monitors help insure that exposed data or materials are collected and that if potentially significant cultural materials or features are encountered, they will be preserved either by realignment of the proposed facilities or by prompt evaluation and recommendations for any necessary mitigative measures. (This measure is 4.14-3 from the *OBMP PEIR*).

**7-4** – If an archaeological resource is found to be significant and no other preservation option is possible, mitigation of adverse effects by scientific data recovery, including analysis and reporting is the method of last resort. Such a mitigation program is usually only developed after an assessment test has been completed to identify physical parameters and cultural complexity, and formulate a research design. Each specific program would have to be developed in response to the site and potential impact, with the concurrence of the appropriate agencies and in consultation with Native American representatives. This measure is 4.14-4 from the *OBMP PEIR*.

### **AESTHETICS AND RECREATION**

**8-1** – All surface areas disturbed by Peace II construction activities, except those areas occupied by structures or hardscapes, shall be re-vegetated, either with native vegetation in natural landscapes or in accordance with a landscape plan in man-made landscape areas. In non-native areas, landscaping shall prioritize the use of native species or drought tolerant non-invasive species. Once construction is completed re-vegetation shall begin immediately. Where a formal

landscape plan is to be implemented, it shall be coordinated with the local agency and the local design guidelines for consistency. Where a native landscape is to be restored, it shall be implemented in cooperation with regulatory agencies with oversight from a qualified biologist. (This measure is a modification of 4.15-1 from the *OBMP PEIR*).

## **TRAFFIC AND TRANSPORTATION**

**13-1** – The construction contractor will provide adequate traffic management resources, as determined by the applicable jurisdiction, to ensure adequate access to all occupied properties on a daily basis, including emergency access. The applicable jurisdiction shall require a construction traffic management plan for work in public roads that complies with the Work Area Traffic Control Handbook, or other applicable standard, to provide adequate traffic control and safety during construction activities. The traffic management plan shall be prepared and approved by the applicable jurisdiction prior to initiation of construction within a traveled roadway alignment. The plan can include the following components: Protective devices, flag persons or police assistance for traffic control sufficient to maintain safe traffic flow on local streets affected by construction at all times. This measure is a modification to 4.7-2 from the *OBMP PEIR*.

**13-3** – The construction contractor will time the construction activities to minimize obstruction of through traffic lanes adjacent to project sites and/or along project alignments during peak hours.

**13-4** – During construction the applicable jurisdiction shall require that traffic hazards for vehicles, bicycles, and pedestrians be adequately identified and controlled to minimize hazards. (This measure is a modification to 4.7-3 from the *OBMP PEIR*).

**13-9** – Future facility ingress/egress shall be reviewed with the agency having jurisdiction over the roadway providing access, and roadway improvements shall be required to eliminate any traffic hazards associated with access to a facility in accordance with standard agency requirements or prudent circulation system planning requirements. This measure is a modification to 4.7-7 from the (*OBMP PEIR*).

## **5.0 APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS**

The draft EA fulfills the requirements of NEPA and other pertinent laws and regulations discussed below.

### **5.1 National Environmental Policy Act Compliance**

NEPA is the nation's primary charter for protection of the environment. It establishes the national environmental policy that provides a framework for federal agencies to minimize

environmental damage and requires federal agencies to evaluate the potential environmental impacts of their proposed actions. Under NEPA, a federal agency must prepare an EA describing the environmental effects of any proposed action having a significant impact on the environment. The EA must identify measures necessary to avoid or minimize impacts resulting from the proposed action or determine if further analysis is required and prepare an EIS. This Proposed Action is in compliance with NEPA.

## **5.2 U.S. Fish and Wildlife Coordination Act (16 u.s.c. 661)**

This Act requires federal agencies to coordinate with USFWS and local and state agencies when any stream or body of water is proposed to be modified. The intent is to give fish and wildlife conservation equal consideration with other purposes of water resources development projects. The Proposed Action would not involve modification of a body of water; therefore, formal coordination and preparation of a Coordination Act Report is not required.

## **5.3 Endangered Species Act of 1973 (Public Law 93-205, as amended)**

The Endangered Species Act (ESA) protects threatened and endangered species, as listed by USFWS, from unauthorized take, and directs federal agencies to ensure that their actions do not jeopardize the continued existence of such species. ESA Section 7 defines federal agency responsibilities for consultation with USFWS. The Act requires preparation of a biological assessment to address the effects on listed and proposed species of a project. Due to the disturbed, park-like landscape of the proposed locations and to other avoidance and minimization methods, no impacts to listed or proposed species are expected. This Proposed Action would be in compliance with the ESA.

## **5.4 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) prohibits the taking or harming of any migratory bird, its eggs, nests, or young without an appropriate federal permit. Almost all native birds are covered by this Act, as well as any bird listed in wildlife treaties between the United States and several countries, including Great Britain, Mexican States, Japan, and countries once part of the former Soviet Socialist Republics. A "migratory bird" includes the living bird, any parts of the bird, its nests, or its eggs. The take of all migratory birds is governed by the MBTA's regulation of taking migratory birds for educational, scientific, and recreational purposes and requiring harvest to be limited to levels that prevent over-utilization. Section 704 of the MBTA states that the Secretary of the Interior is authorized and directed to determine if, and by what means, the take of migratory birds should be allowed and to adopt suitable regulations permitting and governing take. Disturbance of the nest of a migratory bird requires a permit issued by USFWS pursuant to 50 CFR. This work would occur outside the nesting season and the Proposed Action would be in compliance with the MBTA.

## 5.5 Clean Water Act

The CWA Section 404 (b) prohibits the discharge of dredged or fill materials into waters of the United States, including wetlands, except as permitted under separate regulations by the Corps and EPA. Under CWA Section 404, USAGE regulates discharges of dredged or fill material into "Waters of the United States," including wetlands. "Waters of the United States" is defined in 33 CFR 328.3 as follows:

- All waters that are currently used, or were used in the past or may be susceptible to use in interstate or foreign commerce;
- All interstate waters including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams, (including intermittent streams), the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundment of waters otherwise defined as Waters of the United States under the definition; and
- Tributaries of waters, defined above.

The Corps does not require or issue itself permits, although nationwide permits may be applied to USAGE projects and are thus considered when addressing compliance under Section 404(b)(1). Pursuant to 40 GFR 230.10, for all Waters of the United States, only the least environmentally damaging practicable alternative (LEDPA) can be permitted. The Proposed Action does not involve discharge of dredged or fill material in waters of the United States; therefore, a Section 404(b)(1) permit is not required. For the same reason, the project does not require State Water Quality Certification under GWA Section 401. The project would not require a Storm Water Pollution Prevention Plan (SWPPP) under the NPDES under GWA Section 402. This Proposed Action is in compliance with the GWA.

## 5.6 Clean Air Act of 1970 (42 u.s.c. 7401 *et seq.*)

1977 Amendments to the GAA enacted legislation to control seven toxic air pollutants. EPA adopted National Emission Standards for Hazardous Air Pollutants (NESHAP), which has been designed to control HAP emissions to prevent health effects in humans.

1990 Amendments to the GAA determine the attainment and maintenance of NAAQS (Title I), motor vehicles and reformulation (Title II), HAP (Title III), acid deposition (Title IV), operating permits (Titles V), stratospheric O3 protection (Title VI), and enforcement (Title VII).

### *General Conformity*

Under Section 176(c) of the Clean Air Act Amendments (GAAA) of 1990, the lead agency is required to make a determination of whether the proposed action "conforms" to the State

Implementation Plan (SIP). Conformity is defined in GAAA Section 176(c) as compliance with the SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards; however, if the total direct and indirect emissions from the Proposed Action are below the General Conformity Rule *de minimis* emission thresholds, the Proposed Action would be exempt from performing a comprehensive air quality conformity analysis and would be considered to be in conformance with the SIP.

The Proposed Action would not have a significant impact on air quality. The total emissions of each criteria pollutant either meets or is below *de minimis* levels as prescribed in 40 CFR 93.153(b). The action is not considered to be regionally significant. Although there would be an increase in vehicle use, it would be temporary (1-day in duration) and emissions are expected to be minimal and below the *de minimis* thresholds and thus would not violate national or state standards. As a result, the Proposed Action would have no long-term impacts on local or regional air quality. Therefore, this Proposed Action conforms to the Federal GAA as amended in 1990 and as required. The Proposed Action is in compliance with the GAA.

#### **5.7 Noise Control Act of 1972, as amended (42 u.s.c. 4901 *et seq.*)**

Noise generated by any activity and that may affect human health or welfare on federal, state, county, local, or private lands must comply with noise limits specified in the Noise Control Act. The Corps has determined that, by complying with its own Special Events Policy to minimize impacts during the Proposed Action, the Proposed Action is in compliance with the Noise Control Act.

#### **5.8 National Historic Preservation Act (Public Law 89-665; 16 u.s.c. 470-470m, as amended, 16 U.S.C. 460b, 470l-470n)**

The proposed project is in compliance with Section 106 of the National Historic Preservation Act, as implemented by 36 CFR 800. The Proposed Action would not impact cultural resources.

#### **5.9 Archaeological Resources Protection Act, as amended**

The Archaeological Resources Protection Act (ARPA) requires oversight when cultural resources may be impacted when working on federal lands or in case of other work-related federal connections. ARPA allows for the preservation of historical and archeological data, including relics and specimens, which might otherwise be irreparably lost or destroyed. The Proposed Action is in compliance with ARPA because it is not anticipated that buried or other cultural resources will be affected by the project.

#### **5.10 Uniform Fire Code**

The Uniform Fire Code (UFC) contains provisions regarding the storage and handling of hazardous materials. These provisions are contained in Articles 79 and 80, most recently revised in 1997 (UFC, 1997). These articles contain minimum setback requirements for storage of materials. The Proposed Action would be in compliance with the UFC.

#### **5.11 Comprehensive Environmental Response, Compensation, and Liability Act**

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) provides EPA with the authority to identify and clean up contaminated hazardous waste sites. Individual states may implement hazardous waste programs under Resource Conservation and Recovery Act (RCRA) with EPA approval. California has not yet received this EPA approval; instead, the California Hazardous Waste Control Law (HWCL) is administered by the California Environmental Protection Agency (Cal-EPA) to regulate hazardous wastes. Although the HWCL is generally more stringent than RCRA, until EPA approves the California program, both the state and federal laws apply in California. CERCLA also contains enforcement provisions for the identification of liable parties. It details the legal claims that rise under the statute and provides guidance on settlements with EPA. Section 120 of this Act addresses hazardous waste cleanups at federal facilities and requires the creation of a Federal Agency Hazardous Waste Compliance Docket, which lists facilities that have the potential for hazardous waste problems. In addition, a Hazardous Substance Superfund was established to pay not only the EPA cleanup and enforcement costs and certain natural resource damages, but also to pay for certain claims of private parties. Conformance with this law would only be engaged if unforeseen waste was found or was abandoned onsite. The proposed action is in compliance with this Act because no such CERCLA substances are involved with, or are locally stored for, the project's activities.

#### **5.12 National Flood Insurance Program**

The National Flood Insurance Program (NFIP) is administered by FEMA's Flood Insurance Administration. The flood control capacity of the Basin would not be impacted by the Proposed Action; therefore, NFIP users would not be affected.

#### **5.13 Federal Water Project Recreation Act of 1965, as amended**

The Federal Water Project Recreation Act requires that any federal water project must give full consideration to opportunities afforded by the project for outdoor recreation and fish and wildlife enhancement. The Proposed Action would be temporary in nature, and normal park use would resume within 48 hours, in accordance with Corps Special Events Policy.

#### **5.14 Federal Land Policy and Land Management Act of 1976**

The Federal Land Policy and Land Management Act regulates management of the public lands and their various resource values so that resources are used in a combination that will best

meet the present and future needs of the American people. The Proposed Action would provide recreation and cultural opportunities to the public, thus meeting the intent of the Act.

#### **5.15 Americans with Disabilities Act of 1990, as amended (42 use 126, *etseq.*)**

The Americans with Disabilities Act (ADA) prohibits public entities, defined as any state or local government, or division thereof, from excluding any individual with a disability from participation in or be denied the benefits of the services, programs, or activities of a public entity, or be subjected to discrimination by any such entity. A "qualified individual with a disability" is an individual with a disability who, with or without reasonable modifications to rules, policies, or practices, the removal of architectural, communication, or transportation barriers, or the provision of auxiliary aids and services, meets the essential eligibility requirements for the receipt of services or the participation in programs or activities provided by a public entity. By providing the appropriate number of universal access (UA) parking spaces, by having the appropriate number of UA "porta-potties" available, and in other ways making the project accessible, the project would be in compliance with the ADA.

#### **5.16 Executive Order 11988: Floodplain Management**

EO 11988 was signed by President Jimmy Carter on May 24, 1977, and was published in 42 Federal Register (FR) 26351. Its purpose is to "...avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct or indirect support of floodplain development wherever there is a practicable alternative." Each agency will provide leadership, take action to reduce the risk of flood loss, and minimize the impact of floods on human safety, health, and welfare. Agencies will restore and preserve natural and beneficial values served by the floodplains. Each agency also has the responsibility to evaluate potential effects of federal action that may be taken within floodplains. Each agency will ensure planning and budget requests reflect consideration of flood hazards and floodplain management. This project would not impact floodplain management or add to excessive floodplain development.

#### **5.17 Executive Order 12088: Federal Compliance with Pollution Control Standards**

The head of each executive agency is responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to federal facilities and activities under control of the agency. Enactment of environmental commitments to minimize pollution impacts during the Proposed Action would meet the standards of this order.

#### **5.18 Executive Order 12898: Environmental Justice Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations**

