

2. PROJECT DESCRIPTION

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2.1 PROJECT LOCATION

Piru Creek is located in northwestern Los Angeles County and eastern Ventura County, California (Figure 2-1). Overall, Piru Creek drains a mountainous area that is approximately 437 square miles in size. Its confluence with the Santa Clara River occurs approximately four and one-half miles southwest of Lake Piru. At Pyramid Dam Piru Creek's watershed is approximately 295 square miles and has an estimated mean runoff volume of 75,000 acre feet per year (afy). For the purposes of this Draft EIR Piru Creek has been divided into the following segments:

- **Upper Piru Creek:** Upper Piru Creek refers to that portion of Piru Creek that is located upstream of Pyramid Lake.
- **Middle Piru Creek:** Middle Piru Creek is the portion of the Piru Creek that is located downstream of Pyramid Dam and upstream of Lake Piru.
- **Lower Piru Creek:** Lower Piru Creek refers to that portion of Piru Creek that is located downstream of Lake Piru to its confluence with the Santa Clara River.

Figures 2-2 and 2-3 provide topographic maps of middle Piru Creek. These maps identify landmarks referenced in this Draft EIR and, from north to south, the location and numbering of mileposts along middle Piru Creek between Pyramid Dam and Lake Piru.

Middle Piru Creek is approximately 18 miles long and flows roughly north to south from Pyramid Dam through steep mountainous terrain to Lake Piru. Middle Piru Creek crosses over the boundary between Los Angeles and Ventura Counties five times and drops in elevation from approximately 2,200 to 1,200 feet above sea level.

Except for a few private inholdings, middle Piru Creek is surrounded by Angeles National Forest and Los Padres National Forest and primarily is used for recreational activities. There are no access roads or maintained trails along the creek between creek miles 4 and 16 (Figures 2-2 and 2-3), making access to much of the proposed project area very difficult. Between Pyramid Dam and an existing weir located north of Frenchman's Flat (near creek mile 1 in Figure 2-2), middle Piru Creek contains naturally reproducing trout; however, it has not been designated a "Wild Trout Stream" by the California Fish and Game Commission. The CDFG stocks approximately 3,000 pounds of trout annually at Frenchman's Flat, based on its estimates of the creek's biological carrying capacity.

Pyramid Dam, which is situated at the southern end of Pyramid Lake, is located in the northwest corner of Los Angeles County, California. Pyramid Lake is split by the jurisdictional boundary between Angeles National Forest and Los Padres National Forest but lies within the administrative boundary of Angeles National Forest, which manages all recreational facilities at the lake except for Vista del Lago Visitor center, which is managed by the CDWR. Pyramid Lake lies approximately 13 miles north of the community of Castaic. Pyramid Lake is a State Water Project reservoir maintained and operated by CDWR. It is approximately 1,297 surface acres when full and has a maximum water storage capacity of 171,200 acre-feet. The primary sources of water flowing into Pyramid Lake include upper Piru Creek, the West Fork of Liebre Gulch, Gorman Creek, and the West Branch of the California Aqueduct. Pyramid Dam releases water into middle Piru Creek and has a maximum safe release rate of 18,000 cubic feet per second (cfs) through its valves and radial gate.

Placeholder for Fig 2-1 Regional Location and Project Area

Fig. 2-2 Middle Piru Creek – North

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Fig. 2-3 Middle Piru Creek – South

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Lake Piru is located along the eastern border of Ventura County, California, approximately five miles northeast of the community of Piru. Lake Piru is a water storage reservoir maintained and operated by the United Water Conservation District (United); its northern end lies in Los Padres National Forest. When full, Lake Piru has 87,200 acre feet in storage and 1,213 acres of surface area. Lake Piru releases water into lower Piru Creek via Santa Felicia Dam, which was built in 1954 and can release up to approximately 1,000 cfs from its outlet works. The spillway is designed to handle uncontrolled releases up to approximately 166,000 cfs.

2.2 PROJECT BACKGROUND AND OBJECTIVES

2.2.1 Project Background

The proposed project involves changing the current schedule for releasing water from Pyramid Dam into middle Piru Creek to one generally simulating the stream's natural hydrology. This could potentially affect, among other things, delivery of State Water Project Table A¹ water from Pyramid Lake to United. Background regarding the operation of and regulatory requirements for Pyramid Lake and their effects on middle Piru Creek, together with relevant information on Lake Piru, is provided below.

Pyramid Lake

FERC Project 2426, also known as the California Aqueduct Project, was licensed on March 22, 1978; CDWR and the Los Angeles Department of Water and Power, which maintains and operates Castaic Power Plant, are co-licensees. To protect fish in middle Piru Creek, Article 52 of the original license required CDWR to provide a continuous minimum flow in middle Piru Creek downstream of Pyramid Dam of five cfs from November 1st through March 31st and ten cfs for the remainder of the year (April 1st through October 31st). The original Article 52 also required CDWR, in cooperation with CDFG, the USFWS and the USFS, to evaluate within 2 years of project approval whether these minimum flows were adequate to protect downstream aquatic habitat, and to file any recommendations for a revised minimum flow schedule with FERC for approval if warranted. Article 51 of the license required CDWR to prepare, also within 2 years of project approval, a revised Fish and Wildlife Resources Management Plan, usually referred to as "Exhibit S," to supercede the preliminary management practices contained in Exhibit S of the original license. CDWR filed recommendations for modifying stream releases from Pyramid Dam on May 5, 1980 and the revised Exhibit S on May 20, 1980 for FERC approval.

On November 11, 1982 FERC issued Order 2426-010, which amended Article 52 as follows: from November 16th through April 30th, a minimum continuous flow of five cfs is to be released into middle Piru Creek. From May 1st through November 15th, a minimum continuous flow of ten cfs is to be released into middle Piru Creek. However, to maintain the viability of the trout fishery, higher water releases are stipulated on days when local ambient air temperatures reach the following thresholds:

- If the maximum air temperature in the project area is predicted to be between 86° Fahrenheit (°F) and 90°F, the minimum continuous flow is to be increased to 15 cfs between 10:00 a.m. and 6:00 p.m.

¹ "Table A" water refers to CDWR's contractual obligation to deliver a certain number of acre-feet of State Water Project water on an annual basis to the Ventura County Watershed Protection District (VCWPD) under their State Water Project long-term contract. The Table A amount does not assure delivery of that amount but rather provides the basis for proportional allocation of available supplies among all State Water Project contractors.

- If the maximum air temperature in the project area is predicted to range between 91°F and 95°F, the minimum continuous flow is to be increased to 20 cfs between 10:00 a.m. and 6:00 p.m.
- If the maximum air temperature in the project area is predicted to be at or above 96°F, the minimum continuous flow is to be 25 cfs between 10:00 a.m. and 6:00 p.m.

Order 2426-010 states that “these flows may be temporarily modified if required by operating emergencies beyond the control of the Licensees (CDWR), and for short periods for fishery management purposes upon mutual agreement between the Licensees and the California Department of Fish and Game.” The Order also approved the revised Exhibit S submitted by CDWR on May 20, 1980.

During the summers of 1992 and 1993 CDWR maintained constant stream releases into middle Piru Creek at approximately 25 cfs because of high natural inflows into Pyramid Lake. In 1994, CDFG requested continued summer releases of 25 cfs into middle Piru Creek to protect middle Piru Creek’s trout fishery, as well as the arroyo toad (*Bufo californicus*). The arroyo toad is known to breed along middle Piru Creek, and the abrupt daily fluctuations in stream flows resulting from implementation of FERC Order 2426-010 were considered detrimental to this species. Specifically, the fluctuations in water flows were thought to strand arroyo toad eggs and tadpoles when water levels dropped and wash them away when the water rose again.

On December 16, 1994, the arroyo toad was listed as endangered under the Federal Endangered Species Act (FESA). In April of 1995, CDFG proposed an interim stream release schedule that provided for steady flows of 25 cfs from April 1st through August 31st. Between September 1st and October 9th, by which time juvenile arroyo toads have dispersed, CDFG proposed that stream releases be reduced by one cfs every two days. At this time of year, the water in Pyramid Lake typically becomes warmer than the water in middle Piru Creek; hence reducing the inflow of warm water into middle Piru Creek benefits the trout population. From October 10th until the first winter storm, CDFG proposed that flows be maintained at five cfs. In November 1995, CDFG further recommended that flows be gradually increased, or “ramped up,” starting in mid-March to attain 25 cfs by April 1st.

CDWR’s Southern Field Division began operating Pyramid Dam according to CDFG’s proposed stream release schedule in late 1995, although the schedule was never formally approved by the various parties who participated in its formulation. Except for periodic deviations necessitated by operation and maintenance of Pyramid Lake and Dam and water deliveries to United, CDWR implemented this interim stream release schedule through March 14, 2004. Each year, CDWR recovered the volume of State Water Project water that was released into middle Piru Creek during the summer months and that exceeded natural summer inflows into the lake by holding back an equivalent amount of water from the first winter storms of the season. Thus, in addition to keeping summer flows unnaturally high, implementation of the interim stream release schedule also resulted in slightly reduced winter storm water flowing down middle Piru Creek. Under this schedule water is typically recovered from a few medium-sized rain events early in the season. Significant reductions in winter flow have occurred only in high water years when the CDWR is able to appropriate water under the provisions of its water rights permits; CDWR has appropriated water from Piru Creek only seven times since 1978.

On October 25, 1999 FERC issued Order 2426-144, which acknowledged the interim stream release schedule implemented by CDWR since late 1995 as a temporary measure until a permanent agreement could be reached with USFWS and United. Order 2426-144 further approved an amended Exhibit S, which CDWR had submitted for FERC’s consideration on March 25, 1999. This amended Exhibit S required CDWR to establish and maintain a year-round trout fishery in middle Piru Creek between

Pyramid Dam and Frenchman's Flat; it further stipulated that middle Piru Creek was to be stocked with 4,000 pounds of catchable trout annually. However, as noted in Section 2.1, CDFG currently only stocks 3,000 pounds of catchable trout annually in middle Piru Creek based on the biological carrying capacity of the creek.

In June 2003, USFWS advised CDWR that higher-than-usual stream releases from Pyramid Dam in May and June 2003, partly made in response to late spring storms and partly to deliver State Water Project water to United, may have disrupted that year's arroyo toad breeding season and therefore caused incidental take. As a result, two interagency meetings were held regarding water releases into middle Piru Creek. The first meeting was on June 23, the second on August 6, 2003 with representatives from CDWR, USFWS, CDFG, United, Angeles National Forest, Los Padres National Forest, and a subject matter expert from the University of California. Key items discussed included arroyo toad predators in middle Piru Creek; habitat changes in middle Piru Creek caused by water operations pursuant to the interim stream release schedule; habitat differences between upper and middle Piru Creek; recreational fishing; and fish habitat in middle Piru Creek. Attendees concluded that simulating the natural hydrology of middle Piru Creek to the extent operationally feasible would provide the greatest benefit to the arroyo toad and its habitat and achieve CDWR compliance with the federal Endangered Species Act.

In a follow-up letter to CDWR dated August 20, 2003, USFWS stated that sustained summer flows and the partial reduction of winter storm flows in middle Piru Creek were causing the unauthorized take of the arroyo toad and the deterioration of its habitat. The unauthorized take of federally listed species is a violation of the federal Endangered Species Act. To avoid further incidental take of arroyo toad, the USFWS outlined the following recommendations:

- CDWR should change its water releases to return middle Piru Creek to a natural flow regime, which would reduce both arroyo toad predators and encroachment of stream-side vegetation on arroyo toad habitat
- CDWR should deliver State Water Project Table A water to United during the winter months (November 1st through the end of February).

The USFWS further concluded that by implementing the above recommendations, CDWR's water operations at Pyramid Dam would avoid incidental take of the arroyo toad and therefore be in compliance with FESA. If, however, CDWR wanted to continue its existing water release schedule into middle Piru Creek, a formal federal Endangered Species Act Section 7 consultation would have to be completed by FERC before any further incidental take of the arroyo toad, or any other federally threatened or endangered species, could be authorized.

CDWR concluded that the natural flow hydrologic regime agreed upon at the August 6th interagency meeting would be the most effective long-term solution for the protection of the arroyo toad in middle Piru Creek; it would also achieve CDWR's compliance with the federal Endangered Species Act. For several reasons, including the potential impacts upon the recreational fishery in middle Piru Creek, CEQA requirements, and reconciliation with FERC requirements, CDWR asked USFWS to grant a one-year extension (to be in effect from March 15, 2004 through March 14, 2005) of the interim flow stream release schedule while CDWR addressed these statutory and regulatory requirements. USFWS approved the one-year extension of the interim stream release schedule with the following exceptions: (1) water deliveries to United shall be made either in the period between June 15th and August 31st, provided that total stream releases from Pyramid Dam do not exceed 35 cfs, or during the period between November 1st and the end of February; (2) water released into middle Piru Creek during summer months that exceeds natural inflows into Pyramid Lake shall be recovered only from storm

events that generate less than 1,000 cfs of inflow into Pyramid Lake; and (3) all large storm events, defined as events that cause inflows of 1,000 cfs or more into Pyramid Lake, shall be released into middle Piru Creek as soon as operationally feasible and as compatible with the safety requirements at Pyramid Dam and in downstream areas.

Lake Piru

VCWPD has delegated the administration of its State Water Project long-term contract to Casitas Municipal Water District. United currently contracts with the Casitas Water District for 5,000 acre-feet per year of Table A water from the State Water Project. Of the 5,000 acre-feet, 1,850 acre-feet are allocated to the Port Hueneme Water Agency and delivered through Castaic Lake. The remaining 3,150 acre-feet of State Water Project Table A water are delivered by CDWR to United via middle Piru Creek and stored by United in Lake Piru.

In addition to the above delivery, United holds several water rights permits and licenses for the diversion and use of flow within upper Piru Creek's watershed for beneficial use within United's service area. The natural flow tributary to Pyramid Lake is metered and released to United from Pyramid Dam in accordance with the provisions of an agreement between CDWR and United dated April 14, 1967. As provided in its water rights permit for diversion from Piru Creek, CDWR is entitled to divert natural inflow to Pyramid Lake in excess of that which can be appropriated by United.

In February 2002, United released an Initial Study and Negative Declaration pursuant to CEQA for delivery of its State Water Project water from Pyramid Lake into Piru Creek. The Initial Study also evaluated an additional one-time delivery of 6,768 acre feet. CDWR filed a Notice of Determination in July of 2002 approving delivery of 3,150 acre feet of State Water Project water in 2002; however, the remainder of United's proposed project was not approved. As a result of the 3,150 acre feet delivered to United in 2002, releases into middle Piru Creek were increased from 26 cfs on July 16, 2002 to 35 cfs on July 27, 2002. United proposes to take delivery of future State Water Project water deliveries from Pyramid Lake via middle Piru Creek.

2.2.2 Project Objectives

The primary objective of the proposed project is to modify stream releases from Pyramid Dam to avoid the incidental take of the federally endangered arroyo toad due to water releases into middle Piru Creek. Modifying the current water release schedule to simulate natural flows as closely as possible would prevent the direct and indirect injury and mortality (i.e., "take") of the arroyo toad due to water operations. It would also lead to a decrease in populations of arroyo toad predators (most notably bullfrogs [*Rana catesbeiana*] and crayfish [*Procambarus clarkii*]) and an increase in the amount of suitable arroyo toad habitat. The proposed project would thus achieve CDWR compliance with FESA. An additional benefit of the proposed project would include a decrease in non-native fish populations, which, together with a decrease in bullfrog and crayfish populations, would benefit native fish species.

A secondary objective of the proposed project is to continue using middle Piru Creek as a means of conveyance of up to 3,150 acre-feet of State Water Project Table A water annually to United.

2.3 PROPOSED PROJECT

The proposed project would consist of the implementation of water operations guidelines to simulate the natural hydrology of middle Piru Creek to the extent operationally feasible and consistent with safety considerations. Throughout the year stream releases from Pyramid Dam into middle Piru Creek would

be similar to the natural inflows of water into Pyramid Lake as determined by CDWR's model for natural inflow into Pyramid Lake. This model uses current daily stream flow data from the gauging stations on upper Piru Creek (also known as Piru Creek below Buck Creek) and Cañada de los Alamos and adjusts it for additional inflows from several minor watersheds that drain into the lake but do not have gauging stations. Implementation of the proposed project would be as follows:

- Natural inflow to Pyramid Lake would be released into middle Piru Creek at a rate of up to approximately 18,000 cfs, which is the maximum safe designed release from Pyramid Dam. The exact maximum safe release depends on the lake surface water elevation at the time of the release.
- Storm releases into middle Piru Creek may be less than 18,000 cfs if they are deemed a threat to life, safety, or property at Pyramid Dam or downstream of the dam.
- CDWR may elect to appropriate inflow to Pyramid Lake above the safe release flows under the provisions of its existing water rights.
- Up to 3,150 acre feet of State Water Project Table A water may be delivered to United via middle Piru Creek between November 1st and the end of February of each water year. During this period, water deliveries may be made over a period of a few days, ramping flows up and down to simulate the hydrograph of a typical storm event, or they may be released more gradually over a longer period.
- Releases into middle Piru Creek may be increased by up to 50 cfs for short periods of time to exercise the Pyramid Dam radial gate and stream release valves, to test emergency power sources for operating State Water Project facilities, to conduct tests mandated by FERC or other agencies, or to meet other short-term operational or maintenance requirements. Except for unscheduled events (such as equipment malfunctions) or emergencies, no such tests would be scheduled between March 15th and June 15th. Testing would also be avoided to the extent possible between June 16th and July 31st. Tests may be conducted at any time between August 1st and March 14th, provided that flows do not increase by more than 50 cfs above current base flows during the event and that the event does not last longer than 15 minutes. Scheduled tests requiring larger releases or lasting longer than 15 minutes would require prior notification of USFWS, with further consultation as determined necessary by USFWS; unscheduled releases would require notification of USFWS no later than three business days after the event, again with further consultation as determined necessary by USFWS.
- The gauging station on upper Piru Creek provides 24-hour averages; therefore instantaneous peak stream releases may be attenuated. Unlike a natural inflow hydrograph, which typically peaks sharply, the stream release hydrograph of middle Piru Creek may be attenuated.
- A multiplier is used to account for those portions of the Pyramid Lake watershed that are not tributaries of upper Piru Creek or Cañada de los Alamos upstream of their respective gauging stations. This may result in some deviations for individual storm events due to localized variations in storm water intensity.
- Due to operational constraints, the stream release hydrograph of middle Piru Creek would typically lag measured inflow by approximately one day. Occasionally, the delay may be longer.
- The valves at Pyramid Dam can be adjusted for release flows of less than three cfs; however, the precise measurement of release flows of less than three cfs may not be possible due to operational constraints of the dam's gauging instrumentation. Natural inflow to Pyramid Lake would be released into middle Piru Creek at a rate of up to approximately 18,000 cfs, which is the maximum safe designed release from Pyramid Dam. The exact maximum safe release depends on the lake surface water elevation at the time of the release.

Implementation of the proposed project would result in greater volumes of water passing through middle Piru Creek during the "rainy season" (which typically extends from November through April). From May through October, generally considered the "dry season," the volume and rate of flows into middle Piru Creek would diminish incrementally in response to progressively smaller volumes of

natural surface water flows entering Pyramid Lake. During the dry season it is possible that at times there would be no surface water flow in middle Piru Creek.

Under the proposed project water flow through middle Piru Creek in the summer would not be kept at 25 cfs to maintain the trout fishery. Consequently, CDWR would not need to recover summer water releases of Pyramid Dam during winter months. The CDWR would preserve its permitted right to divert flows in excess of downstream permitted water rights; however, there would be no appropriations until inflow to Pyramid Lake exceeds the safe release from Pyramid Dam and the demands of downstream water rights are being met.