

## **2.0 PURPOSE AND NEED FOR ACTION**

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Operations of Lopez Reservoir and resulting changes in instream flows downstream in Arroyo Grande Creek have contributed to both beneficial and detrimental effects on instream habitat for steelhead and red-legged frogs. Dam and reservoir operations may result in direct losses of juvenile or adult steelhead from stranding or dewatering redds (incubating steelhead eggs) by flow reductions, and may also affect availability and quality of instream habitat. In addition, facilities owned or managed by the District, such as the Arroyo Grande stream gage, are impediments to steelhead migration.

Lopez Dam was completed in May 1968. Historical flow records from the Arroyo Grande gage for 1940 through 1996 (Section 3) show that, before completion of Lopez Dam (1940-1967), streamflow would sometimes cease. After completion of Lopez Dam (1969-1996), streamflow was generally maintained above 1 cubic foot per second (cfs).

During below average and dry years, streamflow at Arroyo Grande is reduced by reservoir operation and diversion in winter and spring, but augmented by releases from reservoir storage in summer. The flow alteration is most prominent in dry years. During dry years, streamflow at Arroyo Grande would diminish to near zero between June and August if Lopez Dam had not been constructed. With the Lopez Project in place, flow augmentation by releases from reservoir storage allows summer flow to be maintained at a higher and more stable rate than if the dam was not present. On average, total flow augmentation is about 500 acre-feet in a below average year and about 800 acre-feet in a dry year.

Reservoir operations affect spawning gravel recruitment to the lower reaches of Arroyo Grande Creek, and flow regulation affects channel conditions and geomorphic processes influencing habitat diversity and characteristics including sediment deposition and erosion, extent of pools and riffles, and other instream habitat features. Changes in instream flows and other operations and maintenance practices may also affect availability and quality of habitat for California red-legged frogs. Red-legged frogs have been observed within Arroyo Grande Creek downstream of Lopez Reservoir by Alley (1996) within the vicinity of the gravel pit pool, the spillway pool, and downstream of the Cecchetti Road crossing. Essex Environmental conducted surveys in the vicinity of Rodriguez Bridge during January 1998 where a red-legged frog was observed. SAIC conducted surveys in 1999, as part of the Lopez Dam seismic remediation program, in the area downstream of the reservoir, including the spillway pool, outlet works pool and channel, and the abandoned trout farm ponds, however, no red-legged frogs were observed during these surveys. SAIC reported observing two red-legged frogs in October 2000 within the Arroyo Grande Creek channel immediately downstream of the Dam outlet structure while conducting snorkel surveys for juvenile steelhead trout.

Fishery monitoring has shown that adult and juvenile steelhead inhabit the creek. Juvenile steelhead have been observed and/or collected within Arroyo Grande Creek during fishery surveys conducted by Alley (1997), CDFandG (2000), and Hanson Environmental, Inc. (unpublished data). Adult steelhead are also known to have occurred within Arroyo Grande Creek where they were vulnerable to stranding as a result of fluctuations in instream flow levels.

To comply with the Endangered Species Act, and provide incidental take authorization for protected species for impacts resulting from District operations and maintenance activities

affecting Arroyo Grande Creek, there is a need for additional protection of steelhead and California red-legged frogs and incidental take authorization for covered activities.

The purpose of the HCP is to authorize the District for incidental take from current and anticipated operations of the Lopez project, while providing protection for steelhead and California red-legged frogs. Specific objectives of the HCP include:

- Provide releases from Lopez Reservoir to Arroyo Grande Creek, varying with inter- and intra-annual (seasonal and between year) hydrologic conditions, to protect and enhance habitat for various lifestages of steelhead and red-legged frogs;
- Avoid, minimize, and mitigate adverse impacts on covered species, from facility operations and maintenance;
- Provide for improvements in steelhead migration;
- Provide opportunities for habitat protection, maintenance, and enhancement for covered species;
- Provide assurances to the District consistent with the USFWS “No Surprises Rule”; and
- Provide incidental take authorization for the District for impacts to covered species included as part of this HCP.