6. ENVIRONMENTALLY PREFERRED ALTERNATIVE

As described in Section 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. The biological evaluation of the project identified other species of concern that could be affected both positively and negatively by the proposed project and its alternatives. The proposed project and its alternatives would also have potentially adverse impacts on water resources, cultural and paleontological resources, and recreation as addressed in Sections 3 and 4 of this Draft EIR, albeit some of these impacts would be less than significant.

Implementation of either the proposed project or one of its alternatives would result in environmental effects as discussed in Sections 3 through 5 of this Draft EIR. These effects range from beneficial impacts to potentially significant impacts that cannot be mitigated to a level of less than significant.

Under the proposed project there would be an increase in the number of days that creek flows of 450 cfs or greater could occur. These conditions could occur periodically (up to eight days per year) in response to storm events and would increase the risk to vehicles and persons trying to cross the creek. Development of a flood warning system (Mitigation Measure H-8, see Section 3.2.4) is proposed as mitigation to reduce risk impacts to less than significant. Additionally, storm water releases could have adverse effects on existing infrastructure, particularly in the creek's upstream area. An engineering analysis, including guidelines and protocol for monitoring erosion, is proposed as mitigation (Mitigation Measure H-3, see Section 3.2.4) to reduce these potential impacts to less than significant. The proposed project would also result in one potentially significant recreational impact. This impact concerns a reduction in the number of trout available for anglers. However, trout stocking of the creek is proposed as mitigation (Mitigation Measure R-3, see Section 3.4.4) to reduce potential impacts to less than significant. No potentially significant impacts that require mitigation were identified for either biological resources, cultural and paleontological resources or any of the other issue areas examined in this Draft EIR; all other impacts were found to be less than significant or beneficial, including beneficial impacts to biological resources and recreation. Species identified in the biological resources section of this Draft EIR (Section 3.1.4) that would benefit from the proposed project include the arroyo chub, arroyo toad, California red-legged frog, Southwestern pond turtle, two-striped garter snake, and California condor.

Alternative 1, the No Project Alternative, would result in significant adverse impacts to arroyo toads and Southwestern pond turtles. Implementation of the No Project Alternative could also result in beneficial impacts to biological resources through the maintenance of riparian and wetland vegetation. This habitat would continue to support potential nesting and foraging habitat for a variety of species including Southwestern willow flycatchers, least Bell's vireo, and yellow warblers warbler. The No Project Alternative would not result in any significant adverse impacts to recreation or cultural and paleontological resources. Similar to the proposed project, the No Project Alternative would result in a significant flood risk impact that can be reduced to a less than significant level through the implementation of Mitigation Measure H-8 (see Section 3.2.4). All other impacts addressed in this Draft EIR for the No Project Alternative would be less than significant or have no impact. It is noted that this alternative would not meet the objectives of the project.

Alternative 2, the Reversion to FERC License 2426 Article 52 Flow Requirements, would result in significant adverse impacts to the arroyo toad and Southwestern pond turtle as described for the No Project Alternative. Similar to Alternative 1, Alternative 2 would also result in beneficial impacts to biological resources through the maintenance of riparian and wetland vegetation, however, reduced flows would have potential adverse but less than significant impacts to populations of rainbow trout. As

with the proposed project, the reduction in trout populations would result in a significant adverse impact to recreation without the implementation of Mitigation Measure R-3. With mitigation, this impact would be considered less than significant. Alternative 2 would also result in the same significant impact due to flooding as described for the proposed project and the No Project Alternative. This impact would be mitigated to a less than significant level with the implementation of flood warning mitigation (Mitigation Measure H-8). All other impacts addressed in this Draft EIR for Alternative 2 would be less than significant or there would be no impact. As Alternative 2 would result in significant adverse impacts to arroyo toad, it would not meet the objectives of the project.

Alternative 3, the Steady Low Summer Flows alternative, would result in significant adverse impacts to arroyo toad and Southwestern pond turtle. As with Alternatives 1 and 2, this alternative would continue to provide beneficial impacts to biological resources through the maintenance of riparian and wetland vegetation. Alternative 3 would also result in potential adverse but less than significant impacts to populations of rainbow trout. This alternative would also result in a potentially significant adverse recreation impact, but this impact would be reduced to a less than significant level with implementation of Mitigation Measure R-3. Implementation of Alternative 3 would also result in a significant impact due to flooding that can be reduced with flood warning mitigation (Mitigation Measure H-8) to a less than significant level. All other impacts would be less than significant or there would be no impact. Similar to the No Project Alternative, this alternative would result in significant impacts to arroyo toads and would not fulfill the primary objective of the project.

Alternative 4, Alternating Summer Flows, would also result in significant adverse impacts to arroyo toad and Southwestern pond turtle. This alternative would continue to provide beneficial impacts to biological resources through the maintenance of riparian and wetland vegetation. This habitat would continue to support potential nesting and foraging habitat for a variety of species including Southwestern willow flycatchers, least Bell's vireo, and yellow warblers. Alternative 4 would also result in potentially adverse but less than significant impacts to populations of rainbow trout. This alternative would also result in a potentially significant adverse impact to recreation, which could, however, be reduced to a less than significant level with implementation of Mitigation Measure R-3. Alternative 4 would also result in a significant, but mitigable impact to water resources from increased flood risk. Implementation of Mitigation Measure H-8 would reduce impacts to a less than significant level. All other impacts would be less than significant or would not occur. This alternative would result in significant adverse impacts to arroyo toads and would not fulfill the primary objective of the project.

Alternative 5, No State Water Project Table A Annual Deliveries, would result in essentially the same benefits and impacts as the proposed project. Under this alternative flooding from storm flows could result in a significant impact due to risk of loss, injury, or death would occur. As with the proposed project, Mitigation Measure H-8 would reduce this impact to a less than significant level. Alternative 5 would also result in one potentially significant adverse recreational impact, which could be reduced to a less than significant level with the implementation of proposed Mitigation Measure R-3. No potentially significant impacts were identified for biological resources, cultural and paleontological resources, or any of the other issues examined in this Draft EIR. It is noted, however, that this alternative would not fulfill the proposed project's objective of delivering State Water Project Table A water to United.

Table 6-1 discusses the advantages and disadvantages of the proposed project and its alternatives.

Table 6-1 Primary Advantages and Disadvantages of the Proposed Project and its Alternatives

Alternative	Advantages	Disadvantages
Proposed Project: Simulation of Natural Flows in Middle Piru Creek	• Avoids incidental take of the arroyo toad, a federally endangered species. • Simulates the natural hydrologic regime of middle Piru Creek. • Reduces the presence of invasive aquatic predators, including largemouth bass, bullfrog, and crayfish, which are known predators of arroyo toad. • Potentially reduces the amount of riparian and wetland vegetation artificially supported by the current regulated flow regime. • Increases the potential for natural stochastic events required for the recruitment and maintenance of natural riparian vegetation and the establishment of arroyo toad breeding habitat (i.e., periodic flooding, scour, and variable water surface elevations). • Improves habitat conditions for other native species including the southwestern pond turtle. • Potentially decreases litter and waste left by recreational users, and may reduce vandalism and off-trail trampling of vegetation and habitat. • Improves the number and depth of pools, which may provide the wild trout with better areas to reproduce and grow, and stocked trout with a better chance of surviving warmer temperatures. (Pool improvement could occur within a single season or could require five to ten years of simulated natural winter flows before benefits are realized.) • Improves conditions for rafting and kayaking. • Continues delivery of State Water Project water to United.	• Increases the erosion potential of the creek, which may have adverse effects on infrastructure, particularly in the upstream area below Pyramid dam. • Increases flood hazards and risks. • Decreases recreation values associated with wading and water play during periods of reduced flow. • Reduces the naturally reproducing trout population and thus the recreational value of the area for anglers.
Alternative 1: No Project	• Provides for continued wildlife access to perennial water. • Maintains dense riparian vegetation that could be utilized for nesting, breeding, and foraging habitat. • Maintains the existing trout fishery in middle Piru Creek.	• Continues the potential for significant adverse impacts to arroyo toads by the loss of breeding, rearing, and juvenile foraging habitat. • Maintains high water current velocities that may flush arroyo toad egg masses and tadpoles downstream. • Supports conditions favorable to arroyo toad predators including bullfrogs, crayfish, and largemouth bass. • Maintains unfavorable conditions for southwestern pond turtles. • Maintains conditions that could result in potential increases in predation risks to juvenile two-striped garter snakes from exotic aquatic predators. • Limits possible beneficial impacts to California condors because summer flows from Pyramid Dam would continue to support camping and picnicking at Frenchman's Flat. • Supports continued deterioration of the recreation areas along middle Piru Creek due to heavy recreational use. • Maintains augmented summer flows that are favorable to the expansion and establishment of both native and exotic aquatic plants. • Increases the potential for channel incision and erosion of creek sediments.
Alternative 2: Reversion to FERC License 2426 Article 52 Flow Requirements	• Maintains dense riparian vegetation that could be utilized for nesting, breeding, and foraging habitat. • Potentially decreases litter and waste left by recreational users as well as vandalism and off-trail trampling of vegetation and habitat.	• Increases potential impacts to arroyo toad in comparison to the No Project Alternative and would result in significant adverse impacts to this species. • Reduces water levels in comparison to the current flow regime and could reduce the

Alternative	Advantages	Disadvantages
		recreational value of middle Piru Creek to picnickers, hikers, and campers. • Exposes rainbow trout to additional heat stress as water releases are lowered to base flows during the early evenings while air temperatures remain high. • Reduces the naturally reproducing trout population and thus the recreational value of the area for anglers.
Alternative 3: Steady Low Summer Flows	• Maintains dense riparian vegetation that could be utilized for nesting, breeding, and foraging habitat. • Potentially decreases litter and waste left by recreational users as well as vandalism and off-trail trampling of vegetation and habitat.	• Results in significant adverse impacts to the arroyo toad from the loss of breeding, rearing, and juvenile foraging habitat. • Maintains large populations of aquatic predators. • Decreases the recreational value of middle Piru Creek for picnickers, hikers, and campers, particularly those visiting the creek to swim and wade. • Reduces the naturally reproducing trout population and decreases the recreational value of the area for anglers.
Alternative 4: Alternating Summer Flows	• Maintains riparian vegetation that could be utilized for nesting, breeding, and foraging habitat. • Increases recreational opportunities for rafters and kayakers compared to existing conditions. • Potentially decreases the amount of waste and litter left by large numbers of recreational visitors as well as visitor related vandalism and off-trail trampling of vegetation.	• Continues adverse, significant impacts to arroyo toads due to the loss of breeding, rearing, and juvenile foraging habitat. • Maintains large populations of aquatic predators. • Reduces the potential for large flood events. • Decreases 5-year flood occurrence to a 25-year occurrence on average. • Increases the potential for heat stress on rainbow trout.
Alternative 5: No State Water Project Table A Annual Deliveries	• Avoids incidental take of the arroyo toad, a federally endangered species • Simulates the natural hydrologic regime of middle Piru Creek • Reduces the presence of invasive aquatic predators, including largemouth bass, bullfrog, and crayfish, which are known predators of arroyo toad • Potentially reduces the amount of riparian and wetland vegetation artificially supported by the current regulated flow regime. • Increases the potential for natural stochastic events required for the recruitment and maintenance of riparian vegetation and the establishment of arroyo toad breeding habitat (i.e. periodic flooding, scour, and variable water surface elevations) • Improves habitat conditions for other native species including the southwestern pond turtle. • Potentially decreases litter and waste left by recreational users as well as vandalism and off-trail trampling of vegetation and habitat. • Improves the number and depth of pools, which may provide the wild trout with better areas to reproduce and grow, and stocked trout with a better chance of surviving warmer temperatures. (Pool improvement could occur within a single season or could require five to ten years of simulated natural winter flows before benefits are realized.) • Improves conditions for rafting and kayaking.	• Increases the erosion potential of the creek, which may have adverse effects on infrastructure, particularly in the upstream area. • Flooding would increase. • Decreases recreation values associated with wading and water play during periods of low flows or no flow. • Reduces the naturally reproducing trout population and decreases the recreational value of the area for anglers. • Discontinues State Water Project water deliveries to United.

The proposed project and Alternative 5 have the least number of significant adverse impacts that cannot be mitigated to a level of less than significant and the greatest number of beneficial impacts. They are also the only alternatives described that achieve the primary objective of preventing further incidental take of the arroyo toad along middle Piru Creek as a result of State Water Project operations at Pyramid Dam. The proposed project also includes the continued delivery of State Water Project Table A water to United without any additional adverse impacts. Consequently, the proposed project is considered the environmentally preferred alternative.