4.1 Project Description and General Environmental Setting

4.1.1 Project Description

As described in Section 2.3 (Alternatives Analyzed) of this EIR/EIS, this alternative would provide for approximately 100,000 AF of usable carryover storage at Moosa Canyon through construction of a new dam and inundation of a natural canyon. Moosa Canyon is located in a relatively unpopulated area 3.5 miles northwest of Valley Center in northern San Diego County. The site is approximately 15 miles north of the City of Escondido and four miles east of I-15 (Figure 4.1-1).

The main features associated with Alternative 2 include a new 384-foot-high dam, with a dam crest that would extend approximately 2,370 feet in length and 30 feet in width. The dam crest elevation would be 1,258 feet AMSL. A saddle dam with spillway would be constructed approximately 1,000 feet to the northeast of the main dam; the spillway elevation would be 1,246 feet AMSL. The saddle dam/spillway would be approximately 84 feet high and 1,090 feet long.
Total storage capacity and surface area (at MNP) of the new reservoir would be 106,590 AF and 870 acres, respectively. The MNP for the new reservoir would be at 1,244 feet AMSL, two feet below the spillway crest. The PMF level for the new reservoir would be at 1,255 feet AMSL. New conveyance facilities would be required to connect the reservoir to the Water Authority’s aqueduct system. The Moosa Reservoir conveyance system would consist of a 25,000-horsepower pump station, flow regulatory storage tank, pipeline, and appurtenant facilities. The pump station would lift water from the Moosa Reservoir to a flow regulatory storage tank. The tank would be located at an elevation of approximately 1,250 feet AMSL, allowing water to be conveyed by gravity from the tank to the Second Aqueduct via a 5.5-mile-long, 90-inch-diameter steel pipeline. The pipeline alignment would follow Moosa Creek from the dam to Old Castle Road, and continue west to the Second Aqueduct along Old Castle Road/Gopher Canyon Road.

Additional facilities would include a marina, new access roads, and new electrical supply to the pump station and other facilities. A portion of the First Aqueduct located below the reservoir inundation area would require relocation and reconstruction. Both public and private property acquisition would be required for the reservoir inundation and pipeline right-of-way.

The primary source of water for the existing Turner Reservoir is imported water delivered from the Metropolitan Water District (MWD) and the Imperial Irrigation District (IID). However, a small portion of the water stored in the reservoir comes from the diversion of Moosa Creek. Construction of the dam, resulting in the diversion and storage of natural flows in Moosa Creek, would require application for an appropriative water right granted by the SWRCB Division of Water Rights. An appropriative right would be required because it would be a new dam impounding water (23 CCR §§ 303), and a source of water would be from streams within the San Luis Rey River watershed.

The Valley Center Municipal Water District (VCMWD) was granted Application 22992 for the appropriation of water along Moosa Creek and for the storage of 3,000 AF in Turner Reservoir annually for irrigation, municipal, and domestic purposes. If the Water Authority were to obtain this right from the VCMWD, and the existing uses, terms, and conditions would be maintained, it is likely that the Water Authority would still need to apply for a change in the point of diversion and authorized place of use. Refer to Section 1.8.1 (Water Rights and Related Permits) of this EIR/EIS for a more detailed discussion of the water rights process and required actions. In determining whether to approve a new appropriative water right application for the Moosa 100K Alternative, and under what conditions, the SWRCB must consider this alternative’s potential environmental impacts and any mitigation measures identified.

4.1.2 General Environmental Setting

The Moosa 100K study area is located approximately 38 miles north of the SV 100K study area. Moosa Canyon is a deep, steep-sided, east-to-west trending canyon that carries the flow of Moosa Creek, a perennial stream that supports well-developed riparian forest habitat. A number of smaller intermittent and perennial tributaries to Moosa Creek support a variety of riparian habitat ranging from marsh to riparian forest. The easternmost portion of the Moosa 100K study
area is characterized by a broad, relatively flat valley that supports riparian habitat along the streams and grassland and dense oak woodland in the transitional upland areas. The upper elevations of Moosa Canyon include steep hillsides, rock outcroppings, and chaparral vegetation. A waterfall is located on Moosa Creek just west of the canyon.

Soils in the Moosa 100K study area range from acidic igneous rock on slopes and peaks to sandy loams in streambeds and floodplains. The lands immediately surrounding Moosa 100K study area are part of the County’s draft North County MSCP pre-approved mitigation area (PAMA). The North County MSCP planning effort is in progress.

Under the terms of Application 22992, Moosa Creek was impounded in the southeast end of the canyon to form Turner Reservoir. Turner Reservoir, Turner pump station, and Betsworth pump station, owned and operated by the VCMWD, are located within the Moosa 100K study area. Currently, no public recreational uses are provided at Turner Reservoir and there are no existing trails located in the Moosa 100K study area.

Moosa Creek is within the San Luis Rey River watershed, which covers approximately 565 square miles, with annual rainfall ranging from less than 12 inches at the coast to 45 inches in the high mountain ranges (Palomar Mountain). The San Luis Rey River is the major stream system in this unit, draining the Oceanside, San Luis Rey, and Valley Center areas, as well as portions of Fallbrook and Camp Pendleton.

Agriculture is the predominant land use within the Moosa 100K study area. Agricultural uses consist primarily of citrus and avocado groves. Residential development within or near the Moosa 100K study area consists of rural residential uses characterized by low-density, single-family dwellings on large lots with residential accessory structures, such as livestock stalls, barns, and storage/tack houses. Higher-density residential areas exist to the west, southwest, and northeast of the Moosa 100K study area. The majority of the lands surrounding the Moosa 100K study area are characteristic of the existing rural residential and agricultural activities in the Valley Center area.

Current recreational uses within the Moosa 100K study area include an equestrian facility, which is located on the abandoned Valley Center Landfill site. The equestrian facility, called Aerie Park, is primarily used about one or two times per month for horse shows and picnics between March and November. The Valley Center Landfill was established as an operating solid waste facility by the County of San Diego in 1958. The facility operated as a burn site from 1958 until 1969, and as a conventional municipal landfill between 1970 and 1978. The landfill has not been in operation since January 1, 1979.
This page is intentionally left blank.
VICINITY MAP OF THE MOOSA 100K ALTERNATIVE

FIGURE 4.1-1