Appendix H Cultural Resources

Cultural resources may be defined as any building, structure, object, or location of past human activity, occupation, or use that may be identified through documentary evidence, oral history, inventory survey, or subsurface investigation. They may include archaeological sites, traditional cultural properties or tribal cultural resources, or structures within the built environment. This chapter discusses the affected environment of cultural resources in the Reach 4B, Eastside Bypass, and Mariposa Bypass Channel and Structural Improvements Project (Reach 4B/ESB Project) area and the potential environmental impacts of the Reach 4B/ESB Project alternatives. This chapter also provides an analysis of potential cumulative effects to cultural resources.

A Programmatic Agreement (PA) is being developed for the San Joaquin River Restoration Program (SJRRP) by the United States Department of the Interior, Bureau of Reclamation (Reclamation), the State Historic Preservation Officer (SHPO), and consulting parties, including Native American tribes, for compliance with Section 106 of the National Historic Preservation Act (NHPA). The PA will provide a framework for conducting the Section 106 process, including mitigation and review protocols, for the Reach 4B/ESB Project and for the SJRRP as a whole.

H.1 Regional Setting

The area of analysis or Area of Potential Effects (APE) for cultural resources includes all areas of potential disturbance associated with each of the Reach 4B/ESB Project action alternatives, and it was defined as the area between the largest levee or setback alignments for Reach 4B1 and the Middle Eastside Bypass. For Reach 4B1, Levee Alignment D comprises the widest alignment (10,150 acres) and includes a portion of the San Luis National Wildlife Refuge (NWR) as well as several privately-owned land parcels. The Project level APE also includes the proposed levee setback along the Middle Eastside Bypass, which encompasses private lands as well as portions of the Merced NWR. Potential disturbance along Reach 4B2, the Mariposa Bypass, and the Lower Eastside Bypass are less well defined and are considered on a programmatic level, though these areas also are included in the study area.

This section describes existing conditions for cultural resources within the Reach 4B/ESB Project area. Information regarding existing conditions was collected through an examination of current literature, archival and record search information, and cultural resource inventory survey data for the Reach 4B/ESB Project that was presented in a recent technical report (Schneider et al. 2017). Supporting information regarding Native American ethnographic resources (Davis-King 2009), built environment resources, and cultural resource sensitivity (Byrd et al. 2009) compiled the for the SJRRP also was integrated.

The Prehistoric Period

The Project area is in the Central Valley Region of California, bounded by the Siskiyou Mountains to the north, the Tehachapi Mountains to the south, the Coast Ranges to the west, and the Sierra Nevada and Cascade ranges to the east. The prehistoric archaeological record within the Central Valley Region encompasses the full range of hunter-gatherer adaptation. Rosenthal, White, and Sutton (2007) noted that prehistoric peoples within the Central Valley Region developed a sophisticated material culture, became the center of an extensive trade system incorporating distant and neighboring regions, and reached population densities equaled only by agricultural societies in the American Southwest and Southeast.

No single cultural historical framework has been established that accommodates the entire prehistoric record of the Central Valley Region, though detailed cultural chronologies have been derived for certain sub-regions. In discussing the cultural history of the Central Valley Region and the Study Area, it is appropriate to use the broad period and stage classification system developed by Fredrickson (1973, 1974) and refined by Rosenthal, White, and Sutton (2007:150) while referencing more localized cultural historical sequences put forth by Olsen and Payen (1969) and Moratto (1984). Broad periods identified for the Central Valley Region include the Paleo-Indian (11,550-8,550 BC), Lower Archaic (8,550-5,550 BC), Middle Archaic (5,550-550 BC), Upper Archaic (550 BC-1100 AD), and Emergent (1000 AD-Historic) periods. A more localized sequence relevant to the Study Area is defined largely by distinctive artifact types and mortuary practices, and includes the Positas (ca. 3300-2600 BC), Pacheco (2,600 BC-AD 300), Gonzaga (AD 300-1000), and Panoche (AD 1500-1850) complexes.

Evidence for human occupation of the Central Valley during the Paleo-Indian (11,550-8,550 BC) and Lower Archaic (8,550-5,550 BC) Periods is sparse. Materials from this period are typically encountered as isolated, chipped stone tools. No materials dating to the Paleo-Indian or Lower Archaic periods have been recovered from the Study Area, though it is likely that erosional and depositional episodes dating to the Late Pleistocene (ca. 9,050 BC) and the Middle Holocene (ca. 5,550 BC) have obscured many early archaeological deposits.

The Middle Archaic Period (5,550-550 BC) witnessed substantial climatic changes in the form of warmer, dryer conditions and the formation of new wetland habitats and stabilized alluvial fans and floodplains (Atwater et al. 1990; Rosenthal et al. 2007; Rosenthal and McGuire 2004). Archaeological sites dating to the Middle Archaic have yielded evidence for increased residential stability, logistical organization, riverine adaptation, and far ranging regional exchange networks (Rosenthal et al. 2007:153-155). The earliest evidence for human occupation of the Study Area dates to the Middle Archaic Period, specifically the Positas Complex (3,300-2,600 BC), and is distinguished by small shaped mortars, short cylindrical pestles, milling stones, perforated flat cobbles, and spire-lopped *Olivella* beads (Moratto 1984:191; Olsen and Payen 1969). The Pacheco Complex (2,600 BC-AD 300) is marked by two distinctive phases: Pacheco B, which pre-dated 1,600 BC, and Pacheco A, which post-dated 1,600 BC. Pacheco B was marked by foliate bifaces, rectangular *Haliotis* ornaments, and thick *Olivella* beads. Pacheco A was distinguished by a proliferation of *Olivella* bead types; perforated canine teeth; bone

awls, whistles, and saws; stemmed and side-notched projectile points; and abundant milling stones, mortars, and pestles.

The Upper Archaic (550 BC-AD 1100) witnessed the onset of cooler, wetter but more stable climatic conditions within the Central Valley. Those conditions resulted in renewed fan and floodplain deposition that formed many of the surface soils observable today. The Upper Archaic Period is better represented and understood than earlier periods. It was marked by cultural, technological, and economic diversity and the rise of large, mounded villages in the lower Sacramento Valley (Rosenthal et al. 2007:156). The localized Upper Archaic Period sequence termed the Gonzaga Complex (AD 300-1000) is characterized by extended and flexed burials; bowl mortars and shaped pestles; squared and tapered-stem projectile points; bone awls and grass saws; distinctive *Haliotis* ornaments; and thin rectangular, split-punched, and oval *Olivella* beads.

By the Emergent Period (AD 1100-Historic), Native Americans living within the Central Valley had developed the cultural traditions that would be noted at the time of European contact. These traditions included technological advances such as the bow and arrow and the fish weir. Native trade networks also appear to have changed during the Emergent Period, as shell beads assumed the role of currency throughout much of the region. Population densities, which had been growing steadily in the Central Valley Region since the Middle Archaic, continued to increase. Within the Study Area, the Emergent Period was expressed through the Panoche Complex (AD 1500-1850), which was separated from the Gonzaga Complex by a 500-year break. It has been distinguished by the remains of large, circular structures; flexed burials as well as primary and secondary cremations; milling stones; varied mortar and pestle types; bone awls, saws, whistles, and tubes; side-notched projectile points; clamshell disk beads; *Haliotis* disk beads; and *Olivella* lipped, side-ground, and rough disk beads (Moratto 1984:193).

The Ethnographic Record

The Study Area falls within the traditional territory of the Northern Valley Yokuts (Kroeber 1925; Wallace 1978). The Yokuts were hunter-gatherers who divided themselves into tribelets organized by kin and shared dialects, resulting in a mosaic of smaller territories and discrete settlements (Kroeber 1925:474). The Yokuts' Penutian language was spoken by some 40 groups using distinctive but closely related dialects. Those groups inhabited three main geographic locales in Central California—the Southern Valley (Tulare Lake), the Northern Valley (San Joaquin Valley), and adjacent foothills (Sierra Nevada) (Kroeber 1925; Wallace 1978). Yokuts' populations numbered approximately 41,000 at the time of European contact and primarily clustered at a narrow strip of land bordering the San Joaquin River and its tributaries as well as lands east of the river along the Sierra Nevada foothills. Fewer Yokuts are thought to have inhabited the western edge of the San Joaquin Valley, where villages were typically located along watercourses such as Los Banos and Panoche creeks (Wallace 1978:463).

Mission birth, baptismal, and death records have been used to extrapolate information about Central California tribelets, including Yokuts speakers (Milliken 1995, 2008). Milliken (2008:Figure 2) noted several Northern Valley Yokuts tribelets within the Study Area vicinity, including the *Janalame* (*Notoals*), *Quithrathre*, and *Silalamne,* who

occupied the valley floor south and east of the confluence of the Merced and San Joaquin rivers (Milliken 2008:5). Typically, Yokuts tribelets consisted of a principal village with a residing chief surrounded by several satellite settlements (Kroeber 1955). Tribelet boundaries were most often defined by physiographic features such as sloughs and rivers. Lightfoot and Parrish (2009:80) posited that tribelet territories would have been sufficiently large and diverse to provide a range of biotic and environmental resources, yet accessible from just a few village locations. Relatively little has been revealed about Northern Valley Yokuts material culture through the ethnographic record, though archaeological contexts have yielded a diverse array of stone tools and implements. Mortars and pestles, handstones and milling slabs, and bedrock mortar outcrops were used for processing acorn nuts, seeds, berries, and small game for consumption or storage. Chipped stone arrow points, knives, and scraping implements made from imported obsidian and locally available chert, jasper, and chalcedony were used to hunt or process game animals (Wallace 1978:465). Bone tools, particularly awls, were prevalent and were widely used in basketry production.

During the Mission Period (ca. 1776-1830s), large numbers of Northern Valley Yokuts were relocated to Spanish missions in the San Francisco Bay Area (Milliken 2008:9). Large numbers of clamshell disk beads, likely associated with Yokuts groups from the Central Valley, have been found in later mission-period deposits at Mission Santa Clara (Allen et al. 2010:171). In addition to participating in missions, Northern Valley Yokuts also actively resisted them, at times fleeing to the tule marshes (the "*Tulares*"; see Teggart 1913) and at other times participating in raids that resulted in the theft or destruction of mission property (Cook 1960, 1962; Milliken 1995, 2008; Phillips 1993). Impacts to the Yokuts from introduced diseases, damage to Native ecosystems, and displacement through missionization was compounded in subsequent years by Mexican and American settlement (Wallace 1978).

The Historic Period

The Spanish Period (1542-1821)

The historic period in California began in earnest in the mid- to late 18th century when the Spanish expanded northward from Mexico into Alta California (Erlandson and Bartoy 1995). The interior of Alta California, specifically the northern portion of the San Joaquin Valley, remained largely unexplored until 1806 when an expedition led by Gabriel Moraga ventured from San Juan Bautista to the San Joaquin River and north to the Mokelumne River. Moraga, accompanied by Father Pedro Munoz, traversed what would later become known as Pacheco Pass. The expedition was notable because it established Pacheco Pass as an important historic period transportation route between Mission San Juan Bautista and the Central Valley. In 1808 and 1811, further expeditions of the San Joaquin River and modern San Joaquin County were conducted (Byrd et al. 2009:16; Hoover et al. 1990:198). Through these expeditions, the Spanish established an interior north-south road called El Camino Viejo. The early 19th century route ran from the Los Angeles coast north along the western edge of the San Joaquin Valley to Patterson Pass (near Tracy) and then west to San Antonio (current East Oakland) (Hoover et al. 1990:85).

Mexican Period (1821-1848)

In 1822, Mexico gained its independence from Spain, and Alta California became part of the Mexican frontier. As the Mexican government consolidated their control of Alta California, several American and Hudson's Bay Company trappers and explorers came west over the Sierras into the interior Central Valley. Among the most notable of these was John C. Fremont; in 1844, he and his party passed close to the Reach 4B/ESB Project area when they travelled south from the Merced River and east of the San Joaquin River (Byrd et al. 2009:16). During the 1840s, Mexican governors granted several land grants along the San Joaquin River in Merced and Stanislaus counties, including *El Pescador*, *Rancho del Puerto*, *Orestimba Rancho*, and *Sanjon de Santa Rita* as well as Thompson's *Rancho*, *Rancheria del Rio Estanislao*, *San Luis Gonzaga*, and *Panocha de San Juan y Los Carrisalitos* (Beck and Haase 1974). In the 1840s, relations between Mexico and the US became strained as the US expanded westward. These political stresses erupted into the Mexican-American War, which lasted from 1846 to 1848. At the close of the war, Alta California became a part of the US with the signing of the Treaty of Guadalupe Hidalgo.

American Period (1849-Present)

In 1848, gold was discovered on the American River, setting off the California Gold Rush. With the rapid influx of settlers into California, land grants awarded by the Spanish or Mexican authorities were increasingly disputed. The American government passed the Land Act of 1851, which placed the burden of proof-of-ownership on the grantees. As a result, the few Native Americans who had received land grants lost their titles, as did many Hispanic land grantees. By congressional action, grant claims were heard by a board of Land Commissioners and then appealed in federal courts. By 1885, 97% of the claims had been decided. Francisco Soberanes filed a land grant claim in 1853 for *Rancho Sanjon de Santa Rita*, and the grant was confirmed in 1862 (Outcalt 1925:Chapter XII; Willey 1886:23). Early American Period settlement of the San Joaquin Valley tended to occur along streams and rivers. Among the earliest such settlements were Dover and Hills Ferry. Dover was established in 1844, five miles north of the confluence of the San Joaquin and Merced rivers (Hoover et al. 1990:203). It was abandoned in 1860 when the community of Hills Ferry was established at the confluence of the Merced River and the San Joaquin River. As the gold mining industry in California declined in the 1850s, the agricultural and ranching industries expanded to become central to the state's economy. Farming in the American Period was characterized by cattle and sheep ranching, grain farming, and irrigation agriculture. Cattle and sheep ranching were dominant until the 1880s. With the completion of the transcontinental railway in 1869, farmers in the Central Valley began to export their crops, including many different types of fruits, nuts, and vegetables, to the rest of the nation. The demand for water for gold mining and agriculture led to the development of numerous water conveyance systems in the Central Valley. In the San Joaquin Valley, large private landholders drove the movement to irrigate their land, which led to the formation of private water companies. Irrigation in Madera, Merced, Fresno and Stanislaus counties came from the Merced, San Joaquin, and Tuolumne rivers and facilitated the construction of the San Joaquin and Kings River Canal from Mendota. This canal comprised the largest single irrigation system in the state during the 1880s (Beck and Haase 1974:76). Private water companies still exist; however, these early, privately financed systems were

dwarfed by early 20th century systems created by municipalities and by the federal government (Beck and Haase 1974). Details regarding the history and development of irrigation and flood control systems, ranching and agriculture, transportation, and wildlife refuges within the Study Area are detailed in the technical report (Schneider et al. 2017) prepared in support of this EIS.

Ranches and Agriculture

During the late 1850s through the 1870s, cattle ranching increased and consolidated along the San Joaquin River. That period also witnessed the rise of grain agriculture within the San Joaquin River lowlands, as federal land patents became increasingly available. By the late 19th century, the largest cattle ranching concern in Merced County was owned by Henry Miller and Charles Lux. Miller and Lux acquired the *Rancho Sanjon de Santa Rita* grant (Outcalt 1925: Chapter XII). They also acquired a large portion of the *Orestimba Rancho* grant, which was located along the eastern side of the San Joaquin River, as well as land to the northwest that they leased from Juan Perez Pacheco (Byrd et al. 2009:22). Miller and Lux established their headquarters at Santa Rita, south of the Reach 4B/ESB Project APE, and developed farming and ranching operations. Several smaller ranches also operated within the Reach 4B/ESB Project area. One of these was Turner Ranch, which appeared on US Geological Survey topographic maps as early as 1918 (USGS 1918, 1948, and 1961a). Farming tracts were present within the Reach 4B/ESB Project area as well, including two located at the edge of the Merced NWR that were patented in the 19th century, one of which lay within the Reach 4B/ESB Project APE.

Irrigation /Flood Control Systems

As ranching and agriculture developed along the San Joaquin River, irrigation and levee systems became important for managing water resources and controlling flooding. Large tracts of tule swamp were drained to create ranching and agricultural lands. The earliest irrigation system developed within the Reach 4B/ESB Project area was established by Miller and Lux on the *Rancho Sanjon de Santa Rita*. There they began the San Joaquin and Kings River Canal and Irrigation Company, which constructed the Main Canal in 1871 and the Outside Canal, which paralleled the Main Canal to the west, in the 1890s. The Main Canal ran from near Mendota north to Los Banos (Igler 2001:76). Miller and Lux also built the Dos Palos and Temple Slough canals in ca. 1882 by improving existing natural sloughs along the San Joaquin River (Byrd et al. 2009:25). A network of smaller, generally hand-built canals and ditches grew from these main canals for irrigation and drainage of swamplands. On the east side of the San Joaquin River, one of the earliest irrigation canals was the East Side or Stevinson Canal, which was completed in 1887 (Outcalt 1925:246-247). In 1911, the US Army Corps of Engineers adopted the Jackson Plan and created the California State Reclamation Board to focus study on large-scale flood control for the Sacramento River watershed. In 1913, the San Joaquin River was added to the plan. By 1955, the Lower San Joaquin Levee District was established and a flood control plan was proposed. The plan, which encompassed the Eastside Bypass and Mariposa Bypass, was adopted in 1958, and all elements were completed by 1966 (Byrd et al. 2009:30).

Duck Clubs and Wildlife Refuges

The Miller and Lux Company sold off portions of its property during the 1920s and 1930s, and parcels within the Reach 4B/ESB Project vicinity were purchased mainly by cattle companies and by duck hunting clubs. Although the Miller and Lux Company initially kept the riparian water rights to their parcels, it ultimately sold the water rights to Reclamation in 1939. Subsequently, the duck clubs and cattle ranchers organized as the Grass Lands Association to negotiate for water from Reclamation. During the 1940s, as the Grasslands Water District, they pressured Reclamation and the US Fish and Wildlife Service to study the importance of waterfowl grassland habitat. The resulting study led to the establishment of the Merced NWR in 1951. In 1966, continued efforts to protect waterfowl habitat led to the creation of the San Luis NWR (Byrd et al. 2009:37). The two refuges were combined as the San Luis National Wildlife Refuge Complex, and now include the Grasslands Wildlife Management Area (US Fish and Wildlife Service 2008).

Transportation Features: Roads and Airstrip

Byrd, Wee, and Costello (2009) reported that three transportation-related features lay within the Reach 4B/ESB Project APE, including two roads and one airstrip. One road appeared on two historic period topographic maps (USGS 1918, 1919); it ran approximately north-south from the Eastside Canal/Stevinson Canal to Turner Ranch. The second was featured on the 1874 "Official Map of Merced County" (Merced County 1874) and extended from the west side of the San Joaquin River. Also within the Reach 4B/ESB Project APE was a historic period airstrip. It appeared on topographic maps sometime after 1948 and before 1961 (USGS 1948, 1961a). No background information was available to document when or why the airstrip was established, though it may have been associated with agriculture (e.g., crop dusting, transport).

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