Archaeological Survey Report for the Sacramento River and E.A. Fairbairn Water Treatment Plants Rehabilitation Project, Sacramento County, California

By:
Laura Leach-Palm, M.A.

With contributions by:
Jack Meyer, M.A.

January 2012

CONFIDENTIAL INFORMATION Removed
Please contact Scott Johnson, City of Sacramento
at (916) 808-5842 with questions

Land Grant:
New Helvetia

USGS Topographic Quadrangle:
Sacramento West, Sacramento East, 7.5-minute

Township and Range:
T9N R4E
T8N R5E

Resource:
Sacramento River ISO #1

Keywords:
Archaeological Survey

On behalf of:
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Submitted to:
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November 2011 DRAFT

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SUMMARY

The City of Sacramento proposes improvements to the Sacramento River Water Treatment Plant (Sacramento WTP) on the Sacramento River, and the E.A. Fairbairn Water Treatment Plant (Fairbairn WTP) on the American River. The project is State-funded and falls under the California Environmental Quality Act (Public Resources Code, Section 21000 et seq., revised 2005). These regulations mandate that California public agencies consider the effects of projects on historic properties (i.e., resources eligible for the California Register of Historical Resources). In the future, the project may acquire federal funds that would make it subject to federal regulations. Therefore, this archaeological inventory has been conducted in compliance with Section 106 of the National Historic Preservation Act.

The City of Sacramento contracted with JRP Historical Consulting to oversee the cultural resources inventory, and conduct the inventory and evaluation for built-environment resources. JRP subcontracted with Far Western to conduct the archaeological inventory. Far Western conducted a records search, requested a search of the Sacred Lands file by the Native American Heritage Commission, assessed the potential for buried archaeological resources, and conducted pedestrian survey of the Area of Potential Effect (APE). The results are reported in this document.

A prefield literature search on December 7, 2011 at the Northwest Information Center found no previously recorded archaeological resources within the APE of the two water treatment plants. Historic-era maps and aerial photos show that residences were established in the northeastern portion of the Sacramento River WTP project area sometime between 1937 and 1954, and had been cleared from the parcel by 2004. As the residences were established after trash removal and interior plumbing were established, no historic-era features are expected.

Far Western contacted the California Native American Heritage Commission to request a search of their database for known sites and sacred areas. The Commission's January 3, 2012 response stated that the files do not indicate Native American cultural resources in the project area, but cautioned that the absence of site information does not mean the absence of resources. Native American groups and individuals contacted about the project have provided varied responses including that cultural resources exist in the proximity of the project; requests for reports pertaining to the project, to consult with Far Western and the City of Sacramento about the project, to be considered a consulting party, to have Native American monitors during ground-disturbing activities, to have a qualified archaeologist and a Native American contacted if inadvertent discoveries are made during construction. If additional responses are received, that information will be forwarded to the City of Sacramento.

Far Western conducted pedestrian survey on December 9, 2011, focusing on areas within both water treatment plants where ground disturbance is planned. Ground surface was covered by vegetation and visibility was poor. No archaeological resources were discovered, but as all areas at each plant have been previously disturbed, surviving surface or near-surface materials are unlikely. One historic-era isolate of three granite slabs, apparently old curbstones, was recorded. Recordation has exhausted the information potential of the resource and no further management is necessary. The stones, however, are interesting and evocative artifacts of Sacramento history and could be incorporated as an asset into the proposed development as part of a landscaping feature.

Far Western also assessed the potential for buried archaeological deposits. Research indicates that the area of the Sacramento River WTP has a low potential for buried prehistoric resources. The northeastern portion of the Fairbairn WTP, however, has a high potential for buried resources.

It is recommended that an additional identification effort consisting of geoarchaeological trenching be conducted in the northeast portion of the Fairbairn WTP where there is a high potential for buried archaeological resources.

If the project APE changes, additional study may be required.

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INTRODUCTION

The City of Sacramento (City) proposes improvements to the Sacramento River Water Treatment Plant (Sacramento WTP) on the Sacramento River (101 Bercut Drive, Sacramento) and the E.A. Fairbairn Water Treatment Plant (Fairbairn WTP) on the American River (7501 College Town Drive, Sacramento; Figure 1). Systems at each facility are aging, less reliable, and operating below capacity and design efficiency. An operational failure at either of the facilities could present water supply problems, including pressure reduction throughout the city and water shortages. The City proposes to replace old and unreliable facilities, construct solids handling improvements at both plants, and build various additional improvements at the Sacramento WTP.

The project is State-funded and falls under the California Environmental Quality Act (CEQA; Public Resources Code, Section 21000 et seq., revised 2005). These regulations mandate that California public agencies consider the effects of projects on historic properties (i.e., resources eligible for the California Register of Historical Resources). The City contracted with JRP Historical Consulting (JRP) to oversee the cultural resources inventory. They address history and built-environment resources in a separate report (JRP Historical Consulting 2011). JRP subcontracted with Far Western to conduct the archaeological inventory. As the project may acquire federal funds that would make it subject to federal regulations, this archaeological inventory is in compliance with Section 106 of the National Historic Preservation Act.

All participants meet the Secretary of Interior's Standards and Guidelines. The Project Archaeologist was Laura Leach-Palm, M.A., under the supervision of Project Manager Patricia Mikkelsen. Jack Meyer, M.A., conducted the buried site assessment.

The main study personnel included the following Far Western staff:

- Patricia Mikkelsen, M.A. in Cultural Resources Management, Sonoma State University; Register of Professional Archaeologists. Company Principal and Project Manager, Far Western Anthropological Research Group, Inc., Davis, California. Thirty years of experience in archaeological studies in California.
- Laura Leach-Palm, M.A. in Anthropology, Stanford University; M.A. in Archaeology Boston University; Register of Professional Archaeologists. Senior Archaeologist, Far Western Anthropological Research Group, Inc., Davis, California. Twenty years of experience in archaeological studies in California.
- Jack Meyer, M.A. in Cultural Resource Management, Sonoma State University; Register of Professional Archaeologists. Principal Geoarchaeologist, Far Western Anthropological Research Group, Inc., Davis, California. Eighteen years of experience in archeological studies in California.

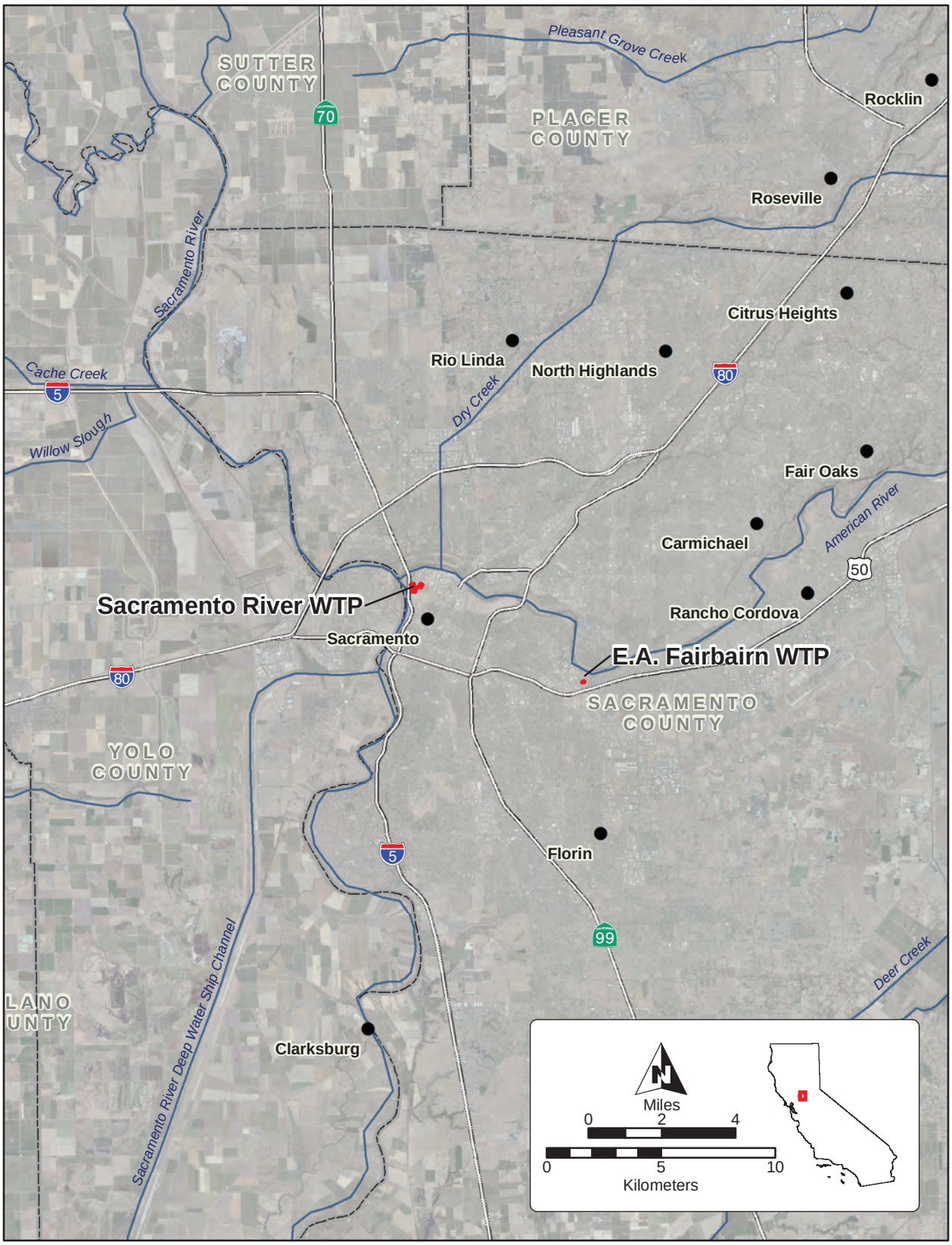

Figure 1. Project Vicinity Map.

PROJECT LOCATION AND DESCRIPTION

The Sacramento River WTP is at 101 Bercut Avenue, Sacramento, on the east side of Interstate 5 just north of the Sacramento railyards (see Figure 1). It was constructed in the 1920s and expanded in the 1930s and again in 2003. The E.A. Fairbairn WTP is on the American River at 7501 College Town Drive, adjacent to California State University at Sacramento. The Fairbairn plant was built in the 1960s and expanded in 2004.

PROJECT PURPOSE AND SCOPE

Systems at each facility are aging, less reliable, and operating below capacity and maximum efficiency. An operational failure at either of the facilities could present water supply problems, including pressure reduction throughout the city, and water shortages. The City proposes to replace old and unreliable facilities, construct solids handling improvements at both plants, and build various additional improvements at the Sacramento River WTP. A list of proposed major improvements at each plant follows. The list includes preliminary estimates of the depth of construction at each proposed facility. These depths are currently being confirmed by the city.

Sacramento River WTP Improvements

Figure 2 shows the location of improvements at the Sacramento River WTP, and Figure 3a and b show the project design. The structures listed here all have pile foundations that extend to a solid gravel layer 55 to 65 feet in depth.

- The **911 Call Center** in the northwest corner of the WTP campus will be demolished, and a new high service pump station, asphalt-concrete roads, parking areas, and pipelines will be constructed. Pump station construction will require fill but the bottom of a piping encasement will extend between 45 and 53 feet below current ground surface.
- A **dewatering building** will be constructed in the northeast corner of the WTP campus at the southeast corner of an existing sludge drying area. Construction will extend four to 18 feet below ground surface. The sludge drying area will be paved.
- **Two thickeners and a pump station** will be built east of the new dewatering building on what is now Sacramento Housing and Redevelopment Agency (SHRA) land. Construction of the thickeners will extend between ten and 21 feet below ground surface. The pump station will require fill in some areas and excavation between 14 and 23 feet in others.
- A **road** will extend from the thickeners and pump station east to Bannon Road.
- **Filters** 1-16 in the center of the campus will be decommissioned, but not demolished.
- **New filters** will be constructed west of the 2003 filters. Construction disturbance will extend between 15 and 18.5 feet in depth.
- **Basin 1** in the southwest portion of the campus will be decommissioned, but not demolished.
- **Basin 2,** immediately east of Basin 1, will be demolished, and a new flocculation and sedimentation basin constructed. Construction will extend only about a foot deep and most of the area will get up to nine feet of fill.
- **Waste wash-water facilities** – a mechanical sludge collection system will be built into the existing concrete basins in the southeast corner of the WTP resulting in no ground disturbance.
- A number of other equipment or interior improvements planned for existing facilities do not include new ground-disturbing activities and are not described here.

Figure 2. Sacramento River Water Treatment Plant Aerial Overview.

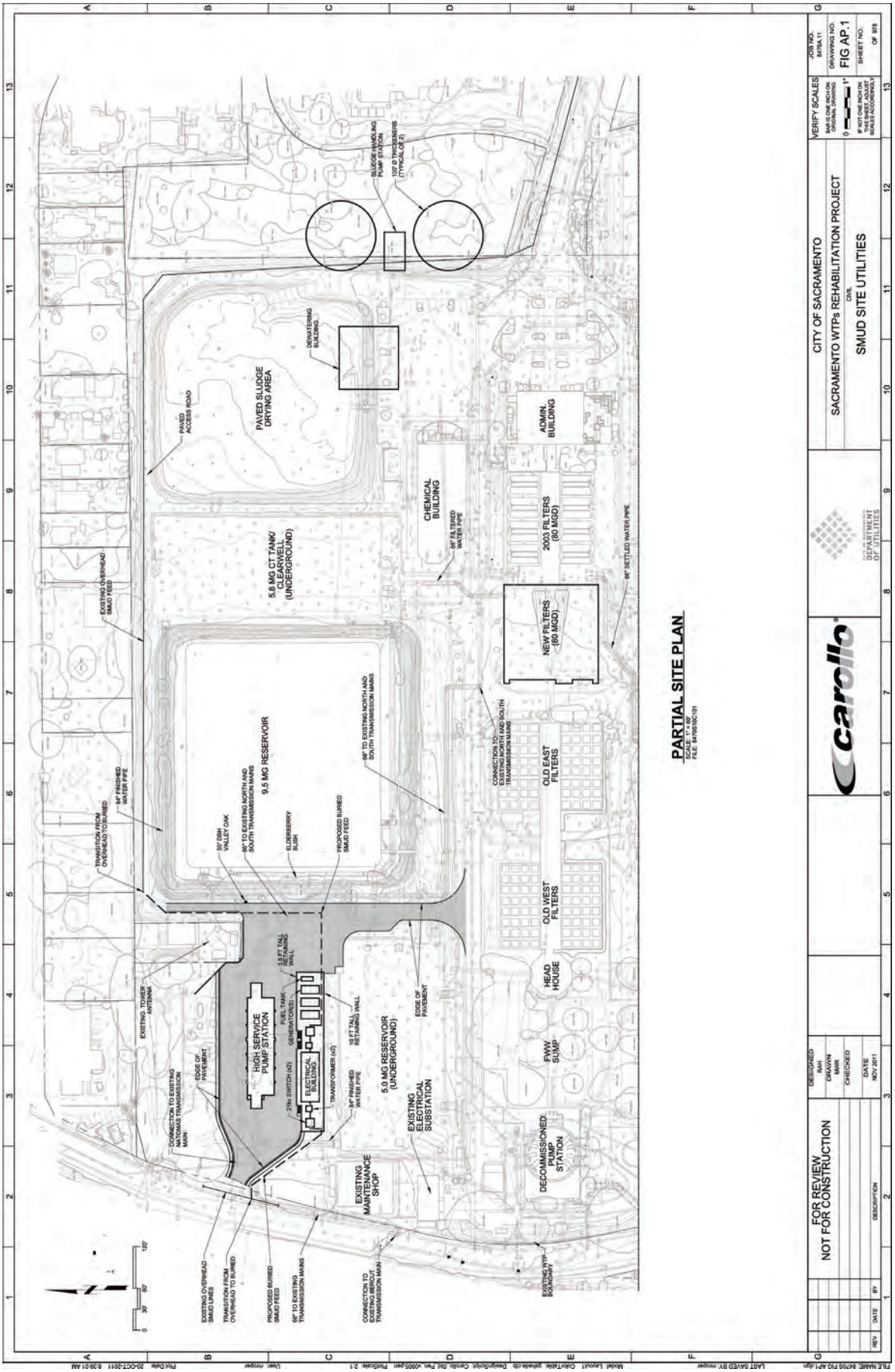

Figure 3a. Sacramento River Water Treatment Plant Project Plan, northern portion.

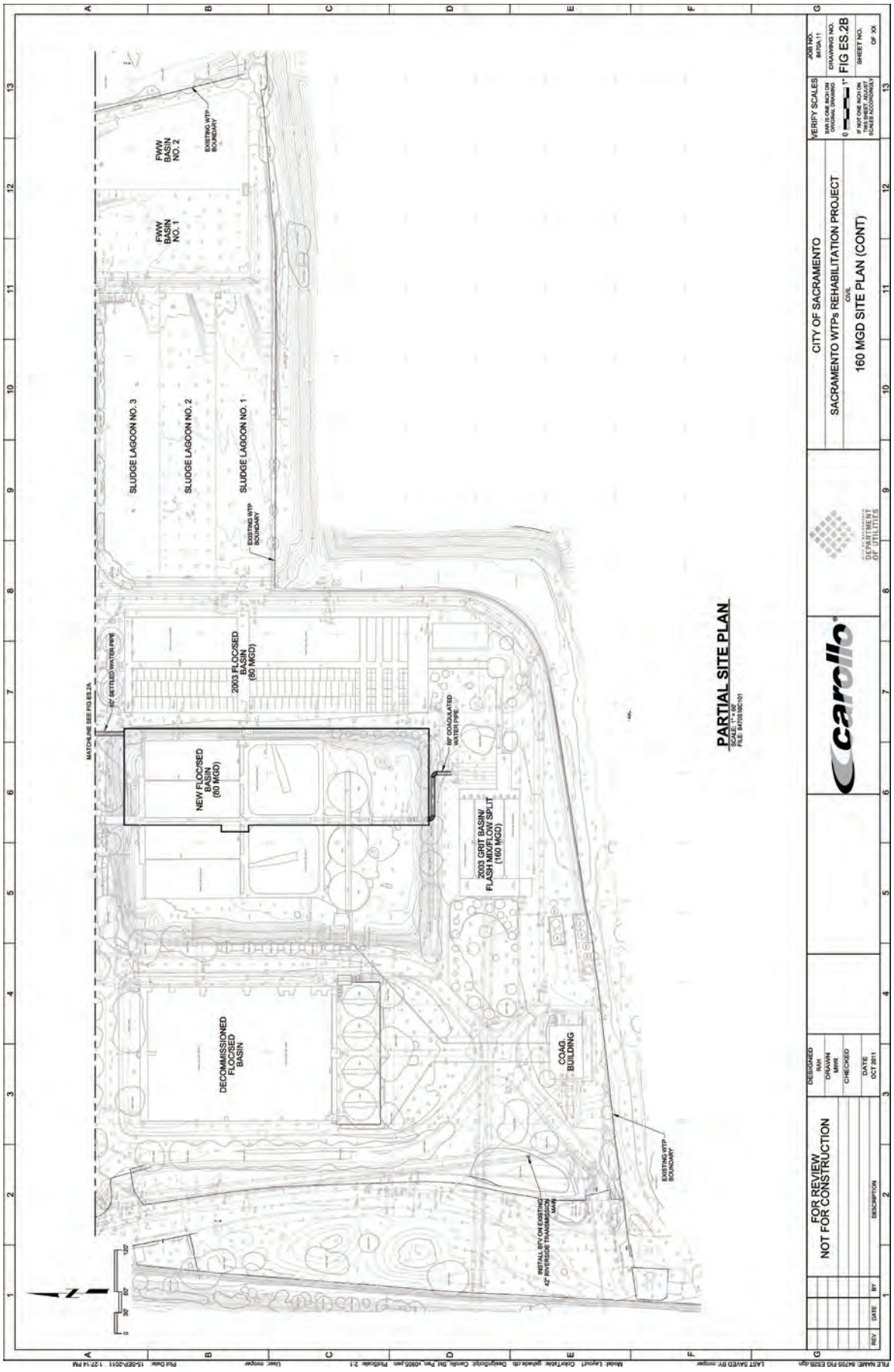

Figure 3b. Sacramento River Water Treatment Plant Project Plan, southern portion.

Fairbairn WTP Improvements

Figure 4 shows the location of proposed improvements at the Fairbairn WTP and Figure 5 shows the project design. These structures will have slab foundations.

- **Waste wash-water facilities** – a mechanical sludge collection system will be built into the existing concrete basins east of the sedimentation ponds, but will not cause any ground disturbance.
- **Two thickeners and a pump station** will be constructed in a currently undeveloped portion of the west-central area of the plant. Construction disturbance for the thickeners will extend approximately nine feet below ground surface, and for the pump station will extend approximately 11 feet below ground surface.
- **A dewatering building** will be constructed within the easternmost concrete-lined sludge pond at its south end. Construction will require four feet of fill.

Figure 4. E.A. Fairbairn Water Treatment Plant Aerial Overview.

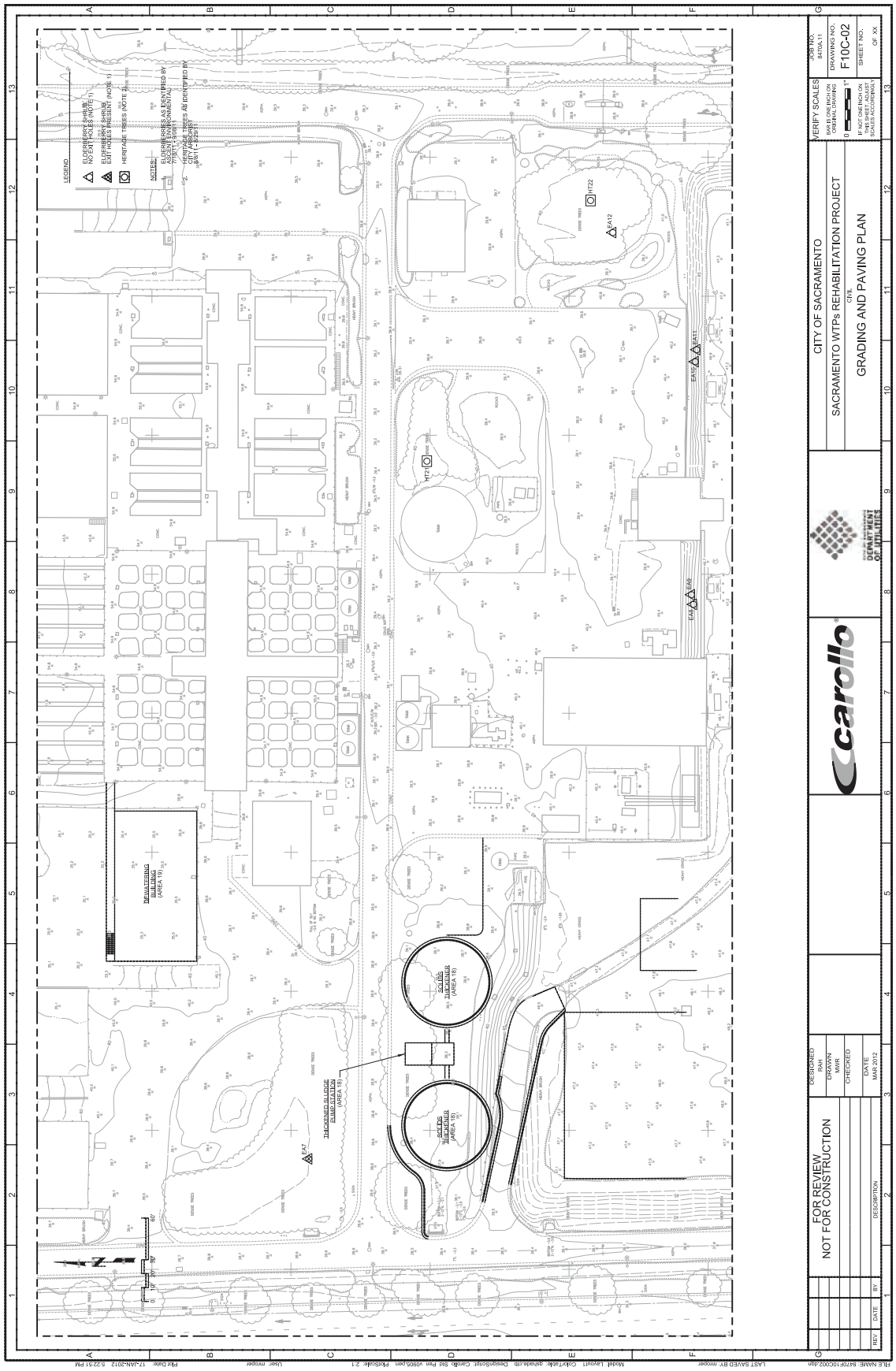

Figure 5. E.A. Fairbairn Water Treatment Plant Project Plan.

SOURCES CONSULTED

Far Western conducted a records search at the North Central Information Center of the California Historical Resources Information System, California State University, Sacramento, on December 7, 2011 (Appendix A). A request for a search of the Sacred Lands File was submitted to the Native American Heritage Commission, Sacramento, on December 1 (Appendix B).

RECORDS SEARCH METHODS AND RESULTS

The record search area consisted of a one-quarter-mile (0.4-kilometer) radius around each of the water treatment plants. Sources consulted included the following:

- *Directory of Properties in the Historic Property Data File*
- *Archaeological Determinations of Eligibility*
- *National Register of Historic Places – Listed Properties and Determined Eligible Properties*
- *California Register of Historical Resources*
- *California Inventory of Historical Resources* (California Department of Parks and Recreation 1976)
- *California Points of Historical Interest* (California Department of Parks and Recreation 1992, listed in the Historic Property Data File)
- *California Historical Landmarks* (California Department of Parks and Recreation 1996, listed in the Historic Property Data File)
- Historic-period maps including General Land Office plat maps and USGS quadrangles.

No previously recorded archaeological resources exist within the boundaries of either of the two water treatment plants. Within the Sacramento River WTP records search buffer, one section of an historic-era levee (P-34-000509/CA-SAC-482H) exists west of the plant. A section of the same levee exists north of the Fairbairn WTP. Eighteen studies have been conducted within the records search study area around the Sacramento River WTP, and six in the records search area for the Fairbairn WTP (Appendix A).

Historic-era maps (Fairoaks 1902 7.5-minute USGS) and aerial photos (Figure 6) show that the land currently owned by the SHRA was vacant until sometime after 1937. By that time trash removal and the advent of indoor plumbing would have negated the need to dump trash behind residences, precluding potential for archaeological features such as wells, privies, or trash pits. The Fair Oaks 1954 USGS quadrangle shows residences in that area. By 2002 though, aerial photos show that the residences are no longer standing and the parcel is mostly cleared and apparently being used as a landscaping nursery. The latter was suggested by Mr. William Zehnder, Senior Engineer for the City of Sacramento, who knew that the parcel was previously used as a nursery.

NATIVE AMERICAN CONSULTATION

As per Section 106, 36 CFR §800.3(f)(2), a reasonable and good-faith effort was made to identify any members of the local Native American community who may attach religious and/or cultural significance to the project properties, and to invite them to comment on all phases of the project. The dates, methods, and content of the contacts are detailed in Appendix B.

Far Western submitted a request to the California Native American Heritage Commission on December 1, 2011, for a search of the Sacred Lands file to determine whether known cultural sites lie within or

The center-top line in the photo (an apparent rail line) that runs east/west, then curves south, appears to be the path of current Bannon Street. The right center of the photo, the location of the SHRA land, shows trees only and no development.
Lusk Air Photo. "Sacramento Water Filtration Plant, Spring 1931." Photo No. 2001/57/16, Bob McCabe Collection. Center for Sacramento History.

Bannon Street is also apparent in this 1937 aerial which again shows the SHRA land vacant.
US Department of Agriculture, Agriculture Adjustment Administration, Sacramento County, CA, ABC-110-91, 10 October 1937.

Figure 6. Aerial Photos showing Undeveloped Land on the SHRA Property through 1937.

near the project parcels, and requested a list of interested Native American groups and individuals who might have information or concerns about the projects. In their January 3, 2012 response, the Commission stated that the files do not show Native American cultural resources in the project area, but cautioned that the absence of site information does not indicate the absence of resources. The response included a list of Native individuals and groups who may have knowledge about the project area that is not available elsewhere.

On January 5, 2012 Far Western sent letters to the Native Americans identified by the Heritage Commission. The letter described the project and its location, Far Western's role, noted that the Commission reported no recorded resources, and asked if the contact had knowledge of cultural resources in the area or any concerns or issues they wanted to communicate. Follow-up phone calls were made between January 12 and 23, 2012. If contacts were not available by phone, voice messages were left for each.

Mr. Marcos Guerrero, Tribal Heritage Preservation Officer for the United Auburn Indian Community of the Auburn Rancheria responded by email January 12. He provided a letter from Tribal Administrator Gregory S. Baker which (1) noted that there are cultural resources in the proximity of the project area; (2) requested copies of any archaeological reports or other environmental document for the project so that the Rancheria has the opportunity to comment on potential impacts and mitigation measures; (3) requested the opportunity to have a tribal monitor accompany the field surveyors; and (4) requested that we contact Mr. Guerrero if there were questions. The letter was forwarded to the City.

Mr. Guerrero's January 12 email stated that there are at least three known villages and several sites with burials in close proximity to the project areas and stated that, if possible, they would like to have a Native Monitor present during any ground disturbance.

Also on January 12, Far Western received a letter from Mr. Daniel Fonseca, Shingle Springs Rancheria, Tribal Historic Preservation Officer and Director of Cultural Resources. His letter requested (1) a copy of any archaeological reports related to the project; (2) that the Rancheria is added as a consulting party for the project, and (3) a consultation meeting pursuant to Section 106. Far Western left a telephone message that the project is currently subject only to CEQA, and forwarded the letter to the City.

Ms. April Wallace Moore stated that although the area might be disturbed and pedestrian survey did not observe any, that cultural material might still exist. Because inadvertent discoveries are possible she requested that a qualified archaeologist and preferably a Native American are contacted if any archaeological materials are encountered during construction.

BACKGROUND

This section reviews the environmental, ethnographic, prehistoric, and historic-era contexts for the project vicinity.

NATURAL ENVIRONMENT

The study area is in the low-lying Sacramento-American River flood basin. Before the major levee-building projects of the 1920s, 1930s, and 1940s, this was seasonal marshland that flooded whenever heavy winter storms caused the Sacramento to overflow its banks. The only places suitable for permanent human occupation would have been the natural levees along the river, and topographic high spots scattered among the marshes.

Sacramento Valley Vegetation and Fauna (excerpted from Meyer and Rosenthal 2008)

Historically, the southwestern portion of the Sacramento Valley was distinguished by the extensive wetlands of the Sacramento-San Joaquin Delta. Prior to reclamation, this region was a freshwater tule marsh, covering almost 500,000 acres around the confluence of the Sacramento, San Joaquin, American, and Cosumnes rivers (Atwater 1980; Shlemon and Begg 1975; West 1977). Often dominated by pure stands of bull rush (*Scirpus* spp.), the native freshwater marsh also contained cattails (*Typha* spp.), sedges (*Carex* spp.), rushes (*Juncus* spp.), and reeds (*Phragmites communis*). Aquatic plants such as pondweed (*Potamogeton* spp.), knotweed (*Polygonum* spp.), and yellow pond lily (*Nuphar polysepalum*) grew in areas of deeper, permanent water, such as ox-bows and other backwater habitats. North of the Delta, non-tidal marshlands in the Sacramento Valley formed a continuous strip along the Sacramento River to approximately the modern town of Willows (Bay Institute 1998:2-39; Küchler 1977). In addition to the Sacramento River, all of the major watercourses draining the Sierra Nevada and Cascade Range, including the Cosumnes, American, Yuba, and Feather, were largely or partially flanked by broad gallery forests, distinct riparian vegetation including both the Valley oak woodlands and river-bank forests (Bay Institute 1998:2-30).

Among the most prominent mammals in the Sacramento Valley were tule elk, pronghorn, and black-tailed deer. Early historical accounts suggest that elk were common in all habitats on the valley floor (Schulz 1981). Pronghorn would have been found throughout the prairie grasslands on the outer border of the riparian forests and marshes (Burcham 1982:96-97). Black-tailed deer in the Sacramento Valley were likely tied to a relatively small home range (Dassman and Taber 1956), and would have been most common in the riparian forests and oak woodland, but reached highest densities in the chaparral and woodlands of the surrounding foothills.

Marsh, grassland, and riparian habitats were home to resident waterfowl such as duck, coot, cormorant, grebes, herons, cranes, egrets, and gulls. Between about November to February, enormous flocks of waterfowl migrating along the Pacific Flyway arrived in the Sacramento Valley. A diverse resident avifauna was also present historically in the Sacramento Valley, composed primarily of hawks, eagles, doves, quail, flicker, woodpeckers, various other accipiters (Accipitridae), owls, turkey vulture, and numerous perching birds.

Open channels and lentic habitats of the river system and Delta each supported different types of fishes. In the open fast-moving waters of the rivers and larger streams were found resident hardhead, and sculpins. Sacramento sucker, and western pike-minnow were common in both fast- and slow-water habitats, while the calmer waters of the Delta and rivers were home to splittail (*Pogonichthys*

macrolepidotus), hitch (*Lavinia exilicauda*), thicktail chub (*Gila crassicauda*), Sacramento blackfish (*Orthodon microlepidotus*), Sacramento perch (*Archoplites interruptus*), and tule perch (*Hysterocarpus traski*). While all five species of Pacific west coast salmon are known from the Sacramento Valley, Chinook salmon is the principal species (Herbold and Moyle 1989). Other economically important anadromous fishes in the river system included white and green sturgeon, Pacific lamprey, and steelhead rainbow trout. Aquatic environments also supported pond turtle and populations of freshwater mussel.

Additionally, grizzly bear were once common throughout the Sacramento Valley, as were black bears, puma, gray fox, bobcat, and coyote, which were the principal carnivores. Badger, spotted skunk, and striped skunk could have been found in a variety of valley habitats. A host of other smaller mammals were common in the riparian and woodland communities including beaver, weasel, mink, and river otter, as well as raccoon, ringtail, grey squirrel, ground squirrel, woodrat, cottontail rabbit, and brush rabbit.

Geomorphology (by Jack Meyer and Phil Kaijankoski)

Over the past few decades it has become increasingly apparent that a significant portion of the archaeological record in the Sacramento Valley has been buried by natural geological processes and historic-era alterations to the landscape (e.g., Meyer and Rosenthal 2008). Before buried sites can be avoided or otherwise "managed," they must first be identified. The potential for buried archaeological sites is a practical problem for resource managers who must make a reasonable effort to identify archaeological deposits in a three-dimensional project area; ensuring that potentially important resources are not affected by project activities. Early detection of buried archaeological deposits also avoids the potential for costly delays that may occur when previously undiscovered resources are encountered during project-related earth-moving activities and late discovery protocols must be initiated. To help avoid this problem, we assess the landscape history of the project area and the potential for buried archaeological resources.

Historic-Period Flooding and Deposition

Intensive nineteenth-century mining in the drainages of the Feather, Yuba, Bear, American, and Cosumnes rivers caused rapid channel aggradation in the lower reaches of these drainages, which temporarily raised many channel beds above their natural elevations (Gilbert 1917; James 1989; Lindgren 1911; Olmstead and Davis 1961:20). Not surprisingly, this caused extensive flooding, channel migration, and widespread sediment deposition throughout the lower portions of the Sacramento Valley (Thompson 1961).

Situated at the confluence of the Sacramento and American Rivers, low-lying areas of the city of Sacramento were frequently inundated in the first years of the gold rush. Even though a large levee system had been built by 1861, the floods that year inundated much of the city. In response, the city elected to build even higher levees and raise the elevation of the downtown business district three meters (about ten feet) or more (Gilbert 1917) using sediment deposited during flooding and importing a substantial amount of fill. Additionally, the American River on the north end of the city was straightened in two areas by directing the river into former river channels. As a result the mouth of the American River was moved approximately one half mile north to its current confluence with the Sacramento, and the old channel was filled in with fill dirt and refuse (Brienes 1979).

Though some mining sediments have been completely removed by recent erosion, large amounts are still stored in many of the region's floodplains and continue to be reworked by active channels (James 1991, 1999). Several archaeological sites near the project area have been documented beneath this recent sediment, including SAC-164 at Sand Cove Park northwest of the project area, and SAC-26 at Discovery Park immediately northwest of the Sacramento River WTP.

Other historic-period activities, such as logging, livestock grazing, plowing, and the replacement of native plants by invasive non-native species also caused significant environmental changes that promoted erosion and deposition (West 1989). Consequently, a significant amount of mining debris was remobilized by lower stream flows and channel incision just as hydraulic mining was coming to an end (James 1997, 1999). Some of this redeposited sediment now forms one or more low terraces along many of the streams and rivers in the region. These human-induced changes were accompanied by dramatic shifts in the location and sinuosity of the Sacramento River (Brice 1977; Larsen et al. 2002; Robertson 1987).

Local Soils and Geomorphic Setting

The Sacramento River and Fairbairn water treatment plants are both situated on a nearly level floodplain south of the American River. The Fairbairn WTP lies near a prominent bend in the river. Soils of the Americanos-Urban land complex are mapped at the surface in the southwest part of the Fairbairn WTP area, and those of the Rossmoor-Urban land complex are mapped to the north and east (Figure 7). Both are associated with alluvial deposits. The two soils differ greatly in their degree of soil development, as the Americanos soils are well-developed, while the Rossmoor soils have no subsurface horizons evident. Based on stratigraphic and radiocarbon evidence, the Americanos soils in the southwest area are estimated to be between 25,000 and 11,500 years old, or Late Pleistocene in age (much too old to have buried archaeological deposits), while Rossmoor soils in the northeast are estimated to be between 1,000 and 150 years old, or recent Holocene in age (Meyer and Rosenthal 2008).

The Sacramento River WTP area lies about 0.4 kilometers (0.25 miles) south of the current confluence of the American with the Sacramento River, at an elevation of about 25 feet above mean sea level. It lies just north of the pre-1867 channel of the American River, within a lowland delta comprised of numerous distributary channels and oxbow lakes. This area was likely subjected to regular flooding, as well as repeated episodes of sediment deposition and removal by channel erosion. Thus, it is unlikely that this area was the focus of repeated or sustained prehistoric human occupation, as is also suggested by the lack of historic-era development in this area. Additionally, while the frequent alluvial deposition could have buried archaeological materials if present, sediment remobilization by channel erosion would have reduced the potential of the preservation of such materials.

The Sacramento River WTP area has Orthents-Urban Land complex soil mapped across the entire surface, except for a small zone in the northeast corner where soils of the Columbia-Urban Land complex are mapped. The Orothent soils are associated with artificial fill deposits in this area. The Columbia soils are very weakly developed and typically found on the surface of the lowest floodplain in drainages whose upper reaches were hydraulically mined, as was the case with the American River and Sacramento River. Therefore, it appears that sediments at the surface of this area are less than 150 years old, or Historical to Modern in age (Meyer and Rosenthal 2008). These soils thus have the potential to overlie buried archaeological deposits.

Relevant Previous Local Studies

In August 2010, exploratory geoarchaeological coring was conducted by Far Western directly west of the Sacramento River WTP where the foundation of a single-pole billboard sign was later constructed (Kaijankoski and Meyer 2011). An hydraulic coring device was used to explore subsurface deposits for buried archaeological materials and buried ground surfaces (paleosols) that are likely to contain archaeological materials. One core at the pole foundation was drilled to 12.8 meters (42 feet) below surface to gain a representative sample of subsurface deposits and determine the presence or absence of archaeological materials. Detailed examination of the core revealed that it did not contain any archaeological materials. The soil profile was as follows:

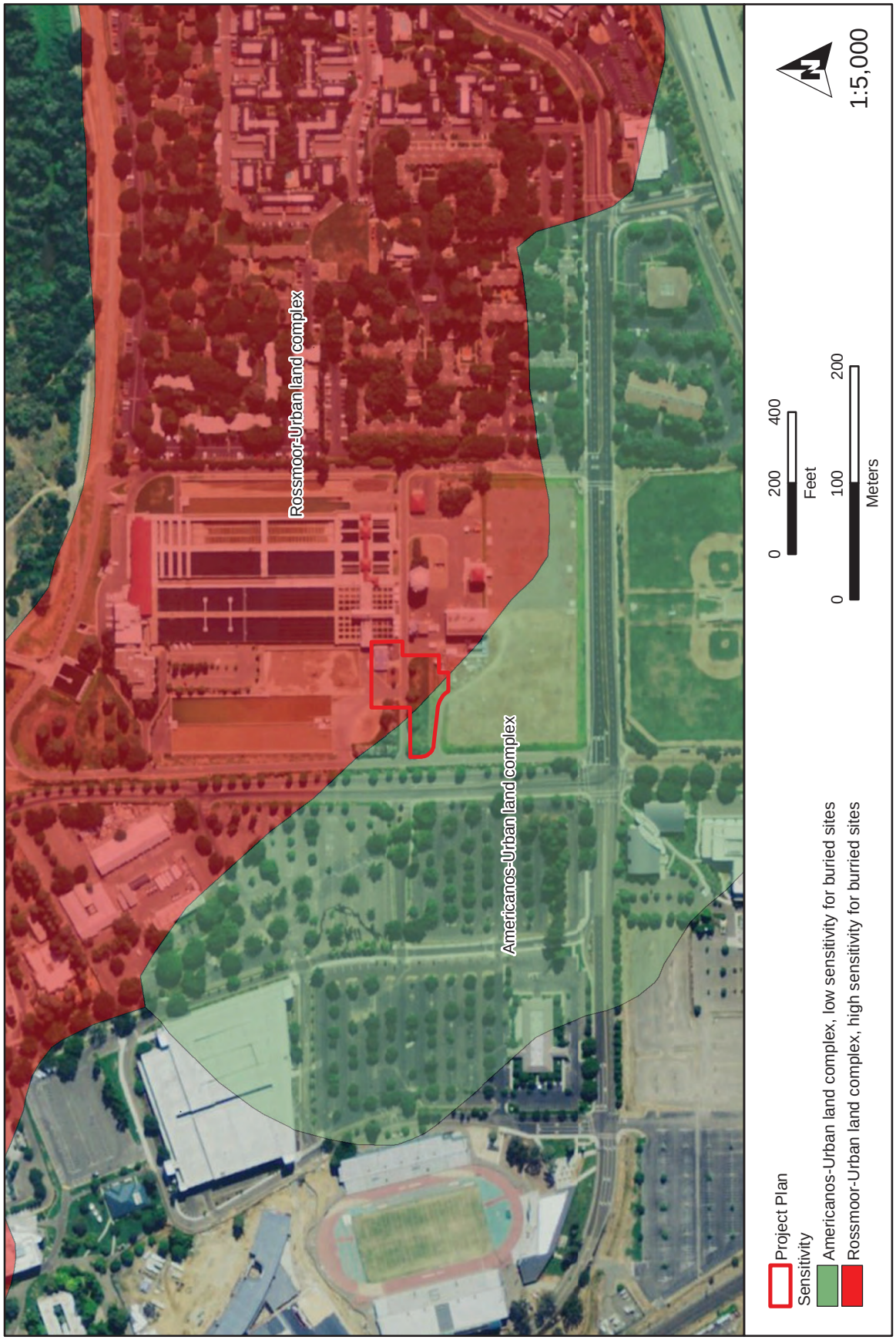

Figure 7. Soil Types and Buried Site Sensitivity at the E.A. Fairbairn Water Treatment Plant.

- Ground surface to 1.2 meters (four feet) depth: artificial fill
- 1.2 to 4.6 meters (four to 15 feet): three meters (ten feet) of clean, well-sorted sand that likely represents hydraulic-mining debris deposited between about AD 1860 and 1880
- 4.6 to 4.7 meters (15 to 15.5 feet): a thin, weakly developed soil that is probably the pre-1860 ground surface. Screening of this soil found no historic or prehistoric archaeological remains
- 4.7 to 9.4 meters (15.5 to 31 feet): a vertically stratified sequence of fine-grained alluvial sediments that were deposited within a former channel or slough
- 9.4 to 12.8 meters (31 to 42 feet—the base of the core): a thick deposit of clean sand with a few gravels that were deposited within a formerly active channel. Radiocarbon dating of organic material from the lowest stratum in the core indicated this channel was filled around 900 years ago, confirming that the area has been subject to repeated episodes of channel erosion and alluvial deposition.

PREHISTORIC CONTEXT (Adapted from Meyer and Rosenthal 2008)

Early Human Use of the Lower Sacramento Valley

The earliest evidence of human occupation in California dates to the *Pleistocene/Holocene Transition*, ca. 13,500-11,500 BP (Before Present). At that time, the Sacramento Valley was already a major river basin with extensive grasslands and riparian forest, but the extensive central California delta-estuary had not yet developed. The earliest tangible clue of human occupation in central California comes from large, fluted dart/spear points found as isolated artifacts in a very few locations. The closest of these to the current project area was found in southeastern Solano County, just north of what is now the Sacramento-San Joaquin Delta (Jackson and Simons 1991). As isolated artifacts, these fluted projectile points add little to our understanding

There is better evidence for human occupation throughout central California during the *Early Holocene* (11,500-7000 BP). Archaeological sites dating to this period have been identified in a variety of natural environments from the Coast Ranges to the High Sierra, though as yet none have been found in the Sacramento Valley. These sites typically contain large stemmed dart/spear points (e.g., Borax Lake Wide-stem, Great Basin Stemmed). The distribution of known Early Holocene sites reveals widespread use of the foothill woodlands surrounding the Central Valley, as well as regular occupation of the confer forest zone of the Sierra and Coast Ranges. Handstones, millingslabs, and a variety of other cobble-based pounding, chopping, and scraping tools are the most commonly reported artifact classes from Early Holocene sites in northern California (Hildebrandt and Hayes 1983, 1993; La Jeunesse and Pryor 1996; Meyer and Rosenthal 1997; Peak and Crew 1990; Rosenthal et al. 1995; White et al. 2002), revealing a clear reliance on plant foods and particularly on nuts.

It was not until about 6,200 years ago, toward the beginning of the *Middle Holocene* (7000-4000 BP), that the salt waters of San Francisco Bay reached what is now the Sacramento-San Joaquin Delta and formed the brackish tidal marsh/estuary found there today (Goman and Wells 2000; contra Shlemon and Begg 1975). This feature dominated the central California landscape from that time on. With a few possible exceptions in Colusa County (White 2003a, 2003b) and Butte County, no Middle Holocene sites have been reported from the Sacramento Valley vicinity.

As early as 6,000 years ago, prehistoric inhabitants of central California were using mortar-and-pestle technology at various lowland sites, particularly in marsh-side, riparian, and estuarine settings (Jones 1991; Jones and Waugh 1997; Levulett et al. 2002; Meyer and Rosenthal 1997). A pestle from the deepest sampled stratum at the Reservation Road site in Colusa (COL-247), dated to 4300-3500 BP,

provides a minimum date for the introduction of these tools in the lower Sacramento Valley. Use of the mortar and pestle in the Sacramento Valley and adjacent lowlands was likely part of an increased technological investment associated with a shift toward greater residential stability that occurred around the emerging freshwater marshes of the Delta and other well-watered riparian ecosystems.

Evidence for increasing residential stability in the Central Valley ca. 5000 BP is best represented by the Windmiller Tradition. The earliest of these settlements, identified in San Joaquin County (SJO-68), is among the first sites in central California to include large cemetery populations, specialized tool assemblages, and an abundance of non-utilitarian items. As part of the economic intensification thought to have accompanied a more sedentary lifestyle (e.g., Basgall 1987; Bouey 1995; Broughton 1994), fishing may have taken on new importance in the Central Valley. Heavy reliance on the emerging mosaic of marshes, riparian forests, and adjacent grasslands is further indicated by the composition of faunal assemblages attributed to the late Middle Holocene: tule elk, mule deer, and pronghorn are all represented, as are smaller rabbits and hares, cranes, geese, swans, ducks, cormorant, turtle, river otter, beaver, coyote, and several other terrestrial carnivores, raptors, and rodents (Ragir 1972:159).

By the end of the Middle Holocene (5000-4000 BP), regionally specific cultural traditions are evident in the lowlands surrounding the Delta, reflecting the co-existence of distinct socio-cultural groups and further implying that territorial circumscription may have been well established in the valley by this time. Commodities such as obsidian from eastern Sierra and North Coast Range quarries and marine-shell beads and ornaments are found among most lowland groups, attesting to the social and economic articulation of these separate cultures during the Middle Holocene.

Late Holocene Use of the Lower Sacramento Valley

During the *Late Holocene*, beginning around 4,000 years ago, climate in central California began to take on its modern characteristics. Data indicates sustained and widespread occupation, with Late Holocene sites known from virtually every habitat in California. The cultural diversity first apparent in the Middle Holocene became much more pronounced in the Late Holocene marked by contrasting burial postures, artifact styles, and other elements of material culture (e.g., Bennyhoff and Fredrickson 1994).

Three primary chronological divisions are recognized during the Late Holocene in central California: the Early, Middle, and Late periods (e.g., Bennyhoff and Hughes 1987; Groza 2002; Rosenthal et al. 2007). The Early Period (4000-2500 BP) is the least understood, due mainly to an under-representation of sites older than 2,500 years. Sites from the Middle Period of the Late Holocene (2500-740 BP) are much more abundant and widely recorded in central California, including at least 25 in the Sacramento Valley. The Late Period in the valley is represented at some 16 sites. In the Valley and Delta regions, the Windmiller Tradition continued into the Early Period, although other (unnamed) cultural complexes are also represented in the archaeological record for the lower Sacramento Valley (e.g., White 2003a; Weldon 1990).

There appears to have been two fundamental adaptations that occurred side-by-side in central California during the Early and Middle periods of the Late Holocene. Upland groups seem to have lived in low-density communities, employed generalized and expedient tools designed for a variety of extraction and processing tasks, and relied on seasonal movements to accommodate changes in resource productivity. On the other hand, groups who occupied the lowland valleys of central California—including along the Sacramento and lower American rivers—appear to have lived in comparatively high-density villages, used a broad range of specialized technologies, and worked logistically from permanent or semi-permanent settlements to obtain resource surpluses for storage and exchange.

No later than 4000 BP, residentially stable communities had emerged throughout the Sacramento Valley. Evidence for these communities includes large mounded settlements and smaller satellite villages

found on levee ridges and other elevated landforms along the major rivers and tributary streams (e.g., Bouey 1995; Bouey and Waechter 1992; Heizer 1949; Lillard et al. 1939; Moratto 1984; Ragir 1972; Schulz 1981). Extended residential occupation is indicated by the presence of well-developed middens often containing hundreds of human graves, storage pits, structural remnants, and other types of domestic features (e.g., hearths ash dumps), as well as seasonally diverse faunal and floral remains. Mortars and pestles became much more common in Central Valley sites (Basgall 1987; Rosenthal and McGuire 2004), as did fishing gear, hunting equipment, wood-working tools, and tools used to fabricate other implements. This diverse assemblage reflects a high degree of technological investment and specialization. A broad range of non-local commodities are also found in lowland sites from the Late Holocene (e.g., alabaster, quartz crystals, actinolite, hemitite), the most common being marine shell beads and ornaments from the nearby Pacific coast, and obsidian from northern and eastern California (Ericson 1977; Jackson 1974; Meacham 1979; Ragir 1972). Large, populous towns developed along the Sacramento River where fish weirs were constructed. A local form of pottery known as Cosumnes Brownware was now being made in the lower Sacramento Valley (Johnson 1990; Kielusiak 1982), and baked-clay balls, probably used for cooking, are a common constituent in the valley, where native stone is virtually absent.

Important shifts in material culture and technology are evident from the archaeological record of the Late Period. Of particular interest is the introduction of the bow and arrow, which replaced the dart and atlatl in different portions of central California between about 1100 and 700 BP. In the Sacramento Valley, the bow and arrow appears to have first been employed several hundred years earlier, based on the occurrence of Gunther Barbed arrow points in well-dated burial contexts in Sacramento and Butte counties.

Shell beads, especially beads made from marine shell, are a very common occurrence at Late Period sites in the lower Sacramento Valley. *Haliotis* ornaments and large quantities of shell beads manufactured in southern California and along the central and northern California coast are found in residential sites throughout the Sacramento Valley and lower foothills of the Sierra and Coast ranges.

ETHNOGRAPHIC CONTEXT (Excerpted from McCarthy 1994)

Native people in the area traditionally lived in large towns along the Sacramento and American rivers, and on ridges, knolls, and benches above the streams (Beals 1933; Kroeber 1925). These people spoke one of three languages in the Maiduan language family (Shipley 1978:83). The *Nisenan*, the most southerly of the Maiduan speakers, once held a territory that stretched from the South Fork Feather River south to the Middle Fork Cosumnes River, and from the Sacramento River east to the Sierran crest (Beals 1933:338-339; Kroeber 1925:391-392; Merriam and Talbot 1974:16-17). They apparently did not reside in the mountains above about 3,000 feet, but used this territory for summer hunting and gathering expeditions (Beals 1933:363).

These villages ranged in size from 25-30 residents to 500 or 1,000 persons (Cook 1976:9; Kroeber 1925:831; Wilson and Towne 1978:389). The largest villages were in the Sacramento Valley, along the river and its tributaries. Structures (which might be represented in the archaeological record) included pole-frame dome-shaped houses ten to 15 feet in diameter and covered with tules or tule mats plastered with earth (Kroeber 1925:407; Wilson and Towne 1978:388); dance houses or *k'um*, large semi-subterranean structures with the door to the west; and at least one sweathouse or *k'um-im-hü*, separate from the dance house and similar in construction, although smaller (Kroeber 1929:259; Wilson and Towne 1978:389).

Both the Valley and Foothill *Nisenan* had access to diverse resources throughout their territories, and they scheduled their subsistence activities according to the seasonal availability of critical harvests. Families or groups of families moved to the gathering sites—now seen on the landscape as small, sparse scatters of flaked and/or ground stone—as the location of the resources and season dictated, returning to

the permanent village to store the harvests and to live during the winter months. Valley people collected acorns from the local valley oaks (*Quercus lobata*), while the Foothill people collected blue oak (*Q. douglasii*) and black oak (*Q. kelloggii*) acorns. Black oak acorns were the most highly preferred variety, and the Valley people traded with the Foothills people to obtain them (Beals 1933:351). The people stored as many acorns as possible, since this was a food staple and was also important for ceremonies.

Fish, particularly salmon and lamprey eels, were essential protein sources for the *Nisenan*. Salmon were taken by the Valley people by the use of weirs, which were built communally. The Foothill people used spears and harpoons but made extensive use of willow nets hung from two long poles. The rivers also yielded numerous other fish, as well as freshwater clams and mussels (Wilson and Towne 1978:389). Large game mammals were an important component of the diet and in the study area included deer, antelope, elk, and bear (Beals 1933:347-348; Kroeber 1925:409-410; Voegelin 1942:58-59). Small game such as rabbits and squirrels were taken, as were many varieties of birds, particularly waterfowl. Bones from a variety of fish, birds, and mammals have been recovered from archaeological sites in the area.

Limited, formal trade was practiced between the Foothill *Nisenan* and their Valley neighbors. Acorns, salt, and beads comprised the major trade items (Beals 1933:365). Clamshell disk beads were equivalent to money, as they had a standard value and acted as currency for most other resources and goods. The east/west trade routes generally followed the major streams, and major trails in *Nisenan* territory approximated the routes of US 50 and old Highway 40 (now partially re-routed Interstate 80; Davis 1974:73, Map 1).

Ethnohistory

The indigenous patterns of *Nisenan* society were irrevocably changed with the arrival of Euro-Americans in California. At the time of contact population densities in the area of the Sac River WTP were about 6.24 persons per square mile, and just to the east around the Fairbairn WTP population densities were about 4.8 persons per square mile (Milliken 2010). By the 1830s, white trappers operated throughout the Central Valley. They brought many diseases, and in 1833, the Indian population was decimated by a pandemic thought to have been malaria (Cook 1955). Also by this time, Mexico had won its independence from Spain and was instituting new administrative policies in California. Many new land grants were given to private citizens for enormous ranchos and, like the missionaries, the ranchers sought their labor supply in the native villages.

The Mexican government also allowed a small number of other nationals to settle, apply for Mexican citizenship, and so become eligible to receive land grants. One such was the Swiss immigrant John Sutter, who, in 1840, established a fort, which he named New Helvetia, on the south bank of the American River in Valley *Nisenan* territory. Sutter engaged in cattle ranching, fur trapping, wheat farming and other agricultural pursuits and also developed a grist mill, sawmill (in the foothills at Coloma), and tannery. Much of his labor was supplied by local Indians, whom he locked in the fort at night so as to have them on the job in the morning (Lienhard 1941:68).

Circumstances became even worse for the *Nisenan* when gold was discovered at Sutter's sawmill in Coloma, in their territory on the South Fork of the American River, in 1848. A year later, 100,000 miners poured into the Sierran Foothills, many of them through the Sacramento-Folsom area, disrupting *Nisenan* (and other Indian) life and often destroying villages and homes. The riverbeds held the placer gold deposits and were thus a major focus of mining activities for many years. Consequently, *Nisenan* residents of the study area would have borne a major brunt of the Gold Rush. Many did survive, however, and today their descendants still live and work throughout the Sacramento Valley/Foothill region.

HISTORICAL CONTEXT (Excerpted from JRP Historical Consulting 2011)

European settlement in the area that became Sacramento was initiated by large land grants allotted by Mexican governors during the Mexican period of California history. In 1841, John Augustus Sutter, from Switzerland, obtained a land grant along the Sacramento River where he constructed a fortified settlement and trading post. The grant, which Sutter named New Helvetia, encompassed approximately 44,000 acres, including all of the land where Sacramento River WTP and Fairbairn WTP currently sit. Even with Sutter's settlement activities, the Sacramento Valley remained isolated and sparsely settled until January 1848, when James Marshall discovered gold at Sutter's lumber mill along the South Fork of the American River at Coloma. The initial development of the City of Sacramento is directly attributable to the subsequent onslaught of gold seekers rushing to the Sierra Nevada and the settlement quickly took on the role of a gold rush river port (Burns 1999:18-29; Hoover et al. 1966:298-299).

Sacramento incorporated in 1850 and its population quickly grew to 6,820 within a few months (Burns 1999:29-31; Jaqueth 1928). Sacramento importance as a gold rush town and growth in the late 1840s and early 1850s made it a viable candidate for the site of the state capitol which was finally located permanently in Sacramento in 1854 (Burns 1999:30-31; Hoover et al. 1966:303-304).

Following the gold rush, residents turned to other commercial pursuits in the new city and agriculture became central to Sacramento's economy. Steamboats provided much of the transportation for the people and goods moving in and out of the city while at the same time a system of streets and roads developed within the city and throughout Sacramento County. Railroads also entered Sacramento with the Sacramento Valley Railroad establishing service between Sacramento and Folsom in 1856 and the Central Pacific Railroad incorporating in 1862 (later became the Southern Pacific Railroad). Thus, by the mid-1860s Sacramento had developed into a bustling transportation, commercial, agricultural, and social hub for the Sacramento Valley and grew to more than 21,000 inhabitants by 1880 (Burns 1999:31-35, 48-50).

During the city's initial decades residential areas expanded and the crude shelters of early years were replaced with brick and wood-frame buildings. The Sacramento riverfront, the business district along J and K streets, the State Capitol area developed first, with the land farther east being built up as the city's population increased. The levee system adapted by the city in the late 1850s and early 1860s placed limitations on urban development, beyond which urban settlement could not expand without being threatened by floodwaters. In 1862, flooding also prompted the city to relocate the mouth of the American River at the confluence with the Sacramento River about one quarter mile north to its current location. The former channel passes directly through the current site of Sacramento River WTP. With the growth of Sacramento came the need for a municipal water supply. The first was developed in 1849 and expanded and evolved as the city grew. (See the historical overview in JRP Historical Consulting [2011] for a discussion of the development of the City's municipal water system).

The beginning of the twentieth century was a boom time for Sacramento. Fruit and vegetable crops had superseded wheat as the dominant crop in the Sacramento Valley, and Sacramento became an important shipping center exporting produce across the nation and to Europe. Sacramento also experienced remarkable industrial growth during the first 30 years of the twentieth century; by the 1920s, with more than 600 factories operating in the city by 1929. The city's population steadily increased reaching 44,696 in 1910; 65,908 in 1920, and 93,750 by 1930 (Burns 1999:72-73; City of Sacramento 1953:36; Lord 1946:275; McGowan 1961:chapters 34, 50, and 51; Phinney, Cate, and Marshall 1913; The Sacramento Bee 1929).

The economic development of the period, in both agriculture and manufacturing, brought a great influx of people to the city, stimulating further residential development, extension of public utilities, and construction of new schools. By the 1910s, much of the area in the vicinity of Capitol Park was devoted to multiple-family properties containing apartments and flats to accommodate the new residents.

Growth continued in the subsequent decades and Sacramento developed into a modern city. The foundation of Sacramento's expansion was a solid economy based on the Southern Pacific railyards, agriculture, and the canning industry.

Sacramento weathered the Depression and, like much of California, was revived by an influx of population because of the military's presence in and near the city during World War II. During the war the defense industry blossomed throughout the state drawing workers from across the nation.

Immediately following the war, growth continued in Sacramento. Military bases remained active after the war and new industry also moved to the area. Further propelling the economy was an increased number of local, state, and federal jobs in the city and the establishment of Sacramento State College, which became California State University Sacramento in 1972. The impact of World War II and the economic boom of the post-war years caused a surge in the population of Sacramento. Between 1940 and 1950, the number of residents increased from 105,958 to 135,761. This trend continued with the population of Sacramento increasing 39% during the decade of the 1950s. Sacramento's growth continued into the 1960s as government and industry remained prominent employers, new freeways facilitated transportation, and the city solidified its role as a regional retail and commercial hub.

SURVEY CONDITIONS AND METHODS

Pedestrian survey of the project area was conducted on December 9, 2011, in all areas where ground disturbance was proposed. Mr. William Zehnder, Senior Engineer for the City of Sacramento, escorted Far Western personnel at each of the two water treatment plants. Two archaeologists walked the accessible open areas in approximately five-meter-wide transects, periodically used hand tools to expose soil under the surface vegetation, and checked rodent-hole backdirt and eroded areas to observe ground surface. Photos were taken to provide a record of the field conditions (Figure 8; Appendix C). At both plants, overall visibility was almost zero, but near-surface prehistoric and historic-period resources are unlikely to have survived in any case, due to past and present disturbances.

At the Sacramento River WTP, the surveyed areas included locations for the planned High Service Pump Station, the new dewatering building, new filters, the SHRA property, and the area surrounding Basin 2 (see Figure 2). The area around the proposed High Service Pump Station was covered by lawn, and the SHRA property was surrounded by shrubs and trees. Ground surface was covered by dense grasses, berry bushes, and exotic garden plants that are no longer being tended. Mr. Zehnder reported that the SHRA property was once Sacramento County's landscaping nursery. Black plastic plant pots were scattered across the parcel, an aluminum greenhouse frame stood near the center, and dozens of small plant pots were still stacked in the northeast corner of the parcel. Two small modern sheds stood along the northern edge of the west parcel boundary. The area for the new filters was entirely covered by lawn. Basin 2 was built in an artificial depression about 20 feet deeper that surrounding ground surface, and was supported by piles that extend 60 to 70 feet underground (W. Zehnder, personal communication). The bottom of the Basin 2 depression was not walked.

At the Fairbairn property, the open area where the thickeners and pump station are planned was walked. The shed that will be removed was surrounded by asphalt. Between the shed and the area where the thickeners will be constructed was bare soil covered with landscaping bark, and a road. The area where the thickeners are proposed was covered by lawn, well-established magnolia trees, and some shrubs.

a) Sacramento River WTP, facing northwest; modern sheds on SHRA land.

b) Sacramento River WTP, facing southeast; overview of High Service Pump Station location.

c) Sacramento River WTP, facing southwest; overview of the northern side of Basin 2 showing the artificial depression within which it is built, and the piles under the structure.

d) Fairbairn WTP, facing north; foreground is future location of thickeners and pump station; background right is the shed that will be demolished. The dewatering building will be built in the area of the bare soil on this side of the shed.

Figure 8. Photographs of the Project Areas.

STUDY FINDINGS AND CONCLUSIONS

BURIED SITES POTENTIAL (By Jack Meyer)

As noted above, most Pleistocene-age landforms (more than 13,000 years old) have little potential to contain buried archaeological remains, because they formed prior to the arrival of humans in North America. Conversely, most Holocene-age landforms have some potential to contain buried remains, because they formed during or after people first occupied the region. The occurrence of buried soils in Holocene-age alluvial and colluvial landforms is significant because they represent formerly stable ground surfaces that were available for human occupation in the past. Regional evidence indicates a strong correlation between Holocene-age landforms, buried soils, and buried archaeological remains. Previous studies have shown that prehistoric sites tend to be located within 200 meters (656 feet) or less of a known stream or other water source (Rosenthal and Meyer 2004). Thus, Holocene-age deposits located within 200 meters of an historic-era stream are considered to have an elevated (i.e., high) potential to contain buried sites.

The potential for buried prehistoric archaeological sites in the project areas was estimated based on the age and distribution of surface sediments combined with the proximity to historic-era stream channels (i.e., distance to water), and the results of previous geoarchaeological studies. The criteria for high buried site sensitivity—Holocene-aged deposits and proximity to a waterway—is met in the northeast part of the Fairbairn area where the Holocene-age Rossmoor soils are within 200 meters of the American River. Since the Rossmoor soils appear to have been deposited over part of the Late Pleistocene-age floodplain marked by Americanos soils, there is a high potential for prehistoric archaeological materials and deposits to be buried at relatively shallow depths (e.g., three to six feet) in that portion of the project area.

These criteria are also met in the southern part of the Sacramento River WTP area where Historic-era and modern deposits of artificial fill (i.e., Orothents) are within 200 meters of the former American River channel. However, as no buried archaeological materials or moderately or well-developed buried soils were identified at the billboard coring site, located only about 100 meters (328 feet) west of the Sacramento River WTP area, the potential for a buried site to occur within 12.8 meters (42 feet) of the present ground surface appears to be relatively low. It is likely that the alluvium found in the billboard core continues beyond 42 feet in depth. Although there is a small possibility that a few isolated and/or reworked archaeological materials might be present with the underlying alluvium that was deposited within a prehistoric channel, given the history of erosion, deposition, and reworking, any intact deposit is unlikely.

Recommendations

For the reasons outlined above, no further archaeological identification efforts are recommended for the Sacramento River WTP project area as it is currently proposed. In the Fairbairn WTP area, however, it is recommended that an exploratory geoarchaeological study consisting of backhoe trenching be conducted to help insure that any potentially buried deposit is identified and not inadvertently affected. The effort is recommended in the northwest portion of the project area where significant subsurface earth disturbances are proposed, in particular the "return to intake" channel and 54-inch- [4.5 feet-] diameter pipeline. Given the limited extent of the Rossmoor soils and the proposed impacts, such a study can be completed in one or two days. Pre-construction detection of buried archaeological deposits avoids the potential for costly delays after project-related activities have begun. If nothing is found during trenching at the Fairbairn APE, no additional identification efforts would be necessary.

PEDESTRIAN SURVEY FINDINGS

No archaeological material was observed during field investigations. One historic-period isolated feature was identified at the Sacramento Water Treatment Plant (Figure 9; Appendix D).

Sacramento River WTP Isolate #1

This isolated feature consists of three slabs of quarried and dressed granite lying on the north/south property line between the Sacramento River WTP and the land owned by the SHRA. The southern-most slab is seven feet by one foot by three inches and has quarrying drill marks on its edges. Two more slabs lie 30 meters north of the first. One slab is four feet by one foot by three inches, with no drill marks. The other length of granite is one foot north, is partially buried, and measures approximately three feet by one foot by three inches.

Aerial photographs of this location from 1957 (www.historicaerials.com) show an alley or road along the present property line and residences immediately to the east. The rectangular slabs of granite may be curb stones associated with the former road. The granite slabs will be displaced by construction of the new road, thickener ponds, and pump house in this area. As isolated remnants of a road and a neighborhood that no longer exist, and with no other associated features, these stones are not eligible for inclusion on the California Register of Historical Resources (or the National Register of Historic Places). Recordation of the stones for this project has exhausted their information potential, they are, however, interesting and evocative artifacts of Sacramento history and could be incorporated as an historical asset into the proposed development.

SUMMARY AND CONCLUSIONS

Far Western conducted a records search, a buried site sensitivity assessment, Native American consultation, and pedestrian survey in support of the City of Sacramento's proposed improvements to the Sacramento River and the E.A. Fairbairn Water Treatment Plants.

The Native American Heritage Commission reported that the Sacred Lands file does not indicate any resources within the project area. Contacted Native Americans are aware of cultural resouces in the area and provided requests and concerns that are detailed in Appendix B.

Archival research found that no archaeological resources are recorded within the areas planned for construction at either of the water treatment plants. Historic-era maps and aerial photos indicate various phases of development within the SHRA property east of the Sacramento River WTP, but no potential for subsurface historic-era features.

The buried site assessment determined that there is low potential for buried sites within the top 42 feet of sediments at the Sacramento River WTP. Although construction of the High Service Pump Station will extend up to 53 feet in depth, it is probable that the alluvium defined in the nearby billboard core extends at least that far. Additionally, given the history of erosion, deposition and reworking of the regional sediments it is unlikely that any intact deposit exists within these sediments.

At the Fairbairn WTP, there is a high potential for buried deposits in the northeastern half of the area designated for ground-disturbing construction.

Visibility of the ground surface during pedestrian survey of both plants was almost nil, but all areas have been previously developed and surviving surface and near-surface resources are unlikely. One historic-era isolate was found, apparent granite curb stones along the property line between the Sacramento River WTP and the SHRA property. Recordation of these features has exhausted their information potential and no further management is necessary, but as an evocative asset of Sacramento history the stones could be incorporated into the landscaping for the proposed development.

Figure 9. Confidential Information

It is recommended that in advance of construction, an additional identification effort consisting of geoarchaeological trenching be conducted by a qualified archaeologist at the Fairbairn WTP in the northeast portion of the project area where there is a high potential for buried archaeological resources.

Unidentified Cultural Materials

In the unlikely event that unidentified cultural materials are unearthed during construction, work should be halted in that area until a qualified archaeologist can assess the significance of the find. Additional survey will be needed if project limits are extended beyond the present survey limits.

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APPENDIX A

RECORDS SEARCH DOCUMENTS

Confidential

APPENDIX B

NATIVE AMERICAN CONSULTATION

Record of Contact with Native Americans for the Sacramento Water Treatment Plants Rehabilitation Project (alphabetically by last name)			
Name	**Affiliation**	**Contact**	**Notes**
Native American Heritage Commission		12/1/2011 - email & FAX	Request for Sacred Land files search and list of contacts.
		12/21/2011 - emal	Inquiry to determine if the December 1 request was received.
		12/30/2011 - telephone	Left phone message inquiring whether December 1 request was received.
		1/3/2012	Response states that no Sacred Lands or sites are known within the project area.
Gregory S. Baker, Tribal Administrator	United Auburn Indian Community of the Auburn Rancheria	1/5/2012 - Introductory letter	Far Western mailed a letter and map describing the project, the findings to date, and asking if the recipient had information or concerns they wanted to communicate.
		1/12/2012 letter forwarded by email	Mr. Baker responded by letter which was forwarded by Marcos Guerrero (see below). The letter noted that (1) there are cultural resources in the proximity of the project area; (2) requested copies of any archaeological reports or other environmental document for the project so that the Rancheria has the opportunity to comment on potential impacts and mitigation measures; (3) requested the opportunity to have a tribal monitor accompany the field surveyors; and (4) requested that we contact Mr. Guerrero if there were questions.
Grayson Coney, Cultural Resources Director	Maidu; T si-Akim Maidu	1/23/2012	Ms. Eileen Moon provided contact information for Mr. Coney.
		1/24/2012	Far Western forwarded the initial introductory letter and map to Mr. Coney.
Rose Enos	Maidu/Washoe	1/5/2012 - Introductory letter	As above.
		1/23/2012 - telephone	L. Leach-Palm spoke to Ms. Enos who stated that her interest is the area between Rockland to the Sierra foothills and not as far south as Sacramento.
Daniel Fonseca	Miwok/Maidu; Shingle Springs Band of Miwok Indians	1/5/2012 - Introductory letter	As above.

Record of Contact with Native Americans for the Sacramento Water Treatment Plants Rehabilitation Project (alphabetically by last name)			
Name	**Affiliation**	**Contact**	**Notes**
		1/12/2012 - letter	Mr. Fonseca reponded by letter stating that he would like to initiate consultation with Far Western pursuant to Section 106. The letter requested (1) a copy of any archaeological reports related to the project; (2) that the Rancheria be added as a consulting party for the project, and (3) a consultation meeting pursuant to Section 106. Far Western responded by telephone, leaving a message that the project is currently subject only to CEQA.
		1/12/2012; 1/13/2012	Far Western responded by telephone, leaving a message that the project is currently subject only to CEQA but that the letter and the Band's interest has been forwarded to the City.
Crystal Dilworth, Cultural Resource Office Manager	Miwok/Maidu; Shingle Springs Band of Miwok Indians	1/23/2012 - telephone	Mr. D. Fonseca's letter requested that Far Western contact Ms. Dilworth to schedule a consultation meeting. L. Leach-Palm left Ms. Dilworth a phone message noting the messages left for Mr. Fonseca, that the project is subjust to CEQA only at this time, that the City has been informed of the Band's interest.
Nicholas Fonseca, Chairperson	Miwok/Maidu; Shingle Springs Band of Miwok Indians	1/5/2012 - Introductory letter	As above.
		1/23/2012 - telephone	No answer; the Band receptionist suggested speaking to Angela Rivera who does research for the Department of Cultural Resources. Leach-Palm left a message for Ms. Rivera.
Marcos Guerrero, Tribal Preservation Committee	Maidu/Miwok; United Auburn Indian Community of the Auburn Rancheria	1/5/2012 - Introductory letter	As above.
		1/12/2012	Mr. Guerrero responded with an email with Mr. Baker's letter attached. Mr. Guerrero's email stated that there are at least three known villages, and several sites with burials in close proximity to the project areas and stated that if possible they would like to have a Native Monitor present during any ground disturbance.

Record of Contact with Native Americans for the Sacramento Water Treatment Plants Rehabilitation Project (alphabetically by last name)			
Name	**Affiliation**	**Contact**	**Notes**
		1/12/2012	Leach-Palm responded by email and provided information on expectations for buried soils and resources, and confirmed that Mr. Guerrero is the contact for the Rancheria and follow-up phone call need not be made to Mr. Keyser or Mr. Baker.
David Keyser, Chairperson	Maidu/Miwok; United Auburn Indian Community of the Auburn Rancheria	1/5/2012 - Introductory letter	As above.
Eileen Moon, Vice Chairperson	Maidu; T si-Akim Maidu	1/5/2012 - Introductory letter	As above.
		1/23/2012	Ms. Moon stated that Grayson Coney is the current Cultural Resources Director (see entry above).
April Wallace Moore	Nisenan-Southern Maidu/Konkow/Washoe	1/5/2012 - Introductory letter	As above.
		1/23/2012 - telephone	Ms. Moore stated that although the area might be disturbed and pedestrian survey did not observe any, that cultural material might still exist. Because inadvertant discoveries are possible she requested that a qualified archaeologist and preferable a Native American be contacted if any archaeological materials are discovered.
John Tayaba, Vice Chairperson	Miwok/Maidu; Shingle Springs Band of Miwok Indians	1/5/2012 - Introductory letter	As above.
		1/23/2012	Mr. Tayaba is no longer Chair of the Band or in the office.

MIWOK
MAIDU

United Auburn Indian Community
of the Auburn Rancheria

David Keyser
Chairman

Kimberly DuBach
Vice Chair

Gene Whitehouse
Secretary

Brenda Conway
Treasurer

Calvin Moman
Council Member

January 12, 2012

Laura Leach-Palm
FarWestern Anthropological Research Group, Inc.
2727 Del Rio Place, Suite A
Davis, California 95618

Subject: Sacramento River Water Treatment Plan at 101 Bercut Drive and the EA Faribarn Water Treatment Plant at 7501 College Town Drive

Dear Ms. Leach-Palm,

Thank you for requesting information regarding the above referenced project. The United Auburn Indian Community (UAIC) of the Auburn Rancheria is comprised of Miwok and Southern Maidu (Nisenan) people whose tribal lands are within Placer County and ancestral territory spans into El Dorado, Nevada, Sacramento, Sutter, and Yuba counties. The UAIC is concerned about development within its aboriginal territory that has potential to impact the lifeways, cultural sites, and landscapes that may be of sacred or ceremonial significance. We appreciate the opportunity to comment on this and other projects in your jurisdiction.

In order to ascertain whether or not the project could affect cultural resources that may be of importance to the UAIC, we would like to receive copies of any archaeological reports that have been, or will be, completed for the project. We also request copies of future environmental documents for the proposed project so that we have the opportunity to comment on potential impacts and proposed mitigation measures related to cultural resources. The UAIC would also like the opportunity to have our tribal monitors accompany you during the field survey. The information gathered will provide us with a better understanding of the project and cultural resources on site and is invaluable for consultation purposes.

The UAIC's preservation committee has identified cultural resources within your project area and/or in close proximity, and would like the opportunity to confirm their locations and meet with you regarding this project. Thank you again for taking these matters into consideration, and for involving the UAIC early in the planning process. We look forward to reviewing the aforementioned documents as requested. Please contact Marcos Guerrero, Tribal Historic Preservation Officer, at (530) 883-2364 or email at mguerrero@auburnrancheria.com if you have any questions.

Sincerely,
Gregory S. Baker,
Tribal Administrator

CC: Marcos Guerrero, THPO

SHINGLE SPRINGS RANCHERIA

Shingle Springs Band of Miwok Indians,
Shingle Springs Rancheria
(Verona Tract), California
5281 Honpie Road, Placerville, CA 95667
P.O. Box 1340, Shingle Springs, CA 95682
(530) 676-8010 Office (530)676-8033 Fax

January 10, 2012

Far Western
Anthropological Research Group. Inc.
2727 Del Rio Place, Suite A
Davis, CA 95618

RE: Cultural Resources Inventory for the Sacramento Water Treatment Plants Rehabilitation Project, City of Sacramento, Sacramento County, California

Dear Laura Leach-Palm

The Most likely Descendant, Daniel Fonseca would like to initiate consultation process with Far Western for the Sacramento Water Treatment Plants Rehabilitation Project in Sacramento County. Among other things, we would like this consultation to address the cultural and historic resource issues, pursuant to the regulations implementing Section 106 of the National Historic Preservation Act.

Prior to meeting we would like to request any and all completed record searches and or surveys that were done in or around the project area up to and including environmental, archaeological and cultural reports.

Please let this letter serve as a formal request for the Shingle Springs Band of Miwok Indians to be added as a consulting party in identifying any Traditional Cultural Properties (TCPs) that may exist within the project's Area of Potential Effects (APE).

Please contact Crystal Dilworth, Cultural Resource Office Manager at 530-698-1471 to schedule a consultation meeting pursuant to Section 106 of the NHPA.

Sincerely,

Daniel Fonseca
Cultural Resources Director

SHINGLE SPRINGS RANCHERIA

Daniel Fonseca
Tribal Historic Preservation Officer

P.O. Box 531 • Shingle Springs, CA 95682
Ph (530) 698-1460 • Cell (530) 306-3069 • Fax (530) 698-1408
Email dfonseca@ssband.org

SHINGLE SPRINGS RANCHERIA

Daniel Fonseca
Director of Cultural Resources

P.O. Box 1340 • Shingle Springs, CA 95682
Wk: (530) 306-3069 • Fax (530) 676-8033
Email: dfonseca@ssband.org

Additional Information

California Native Americans
Cultural Resources
Strategic Plan
Commissioners
Federal Laws and Codes
State Laws and Codes
Local Ordinances and Codes
Additional Information

Return to CNAHC Home Page

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, RM 364
Sacramento, CA 95814
(916) 653-4082
(916) 657-5390 – Fax
nahc@pacbell.net

Information Below is Required for a Sacred Lands File Search

Project: Sacramento Water Treatment Plants (FW #1259)

County Sacramento

USGS Quadrangle

Name Sacramento West; Sacramento East

Township See Range Description Section(s) Below

Company/Firm/Agency:
Far Western Anthropological Research Group, Inc.

Contact Person: Laura Leach-Palm

Street Address: 2727 Del Rio Place, Suite A

City: Davis Zip: 95618

Phone: (530) 756-3941

Fax: (530) 756-0811

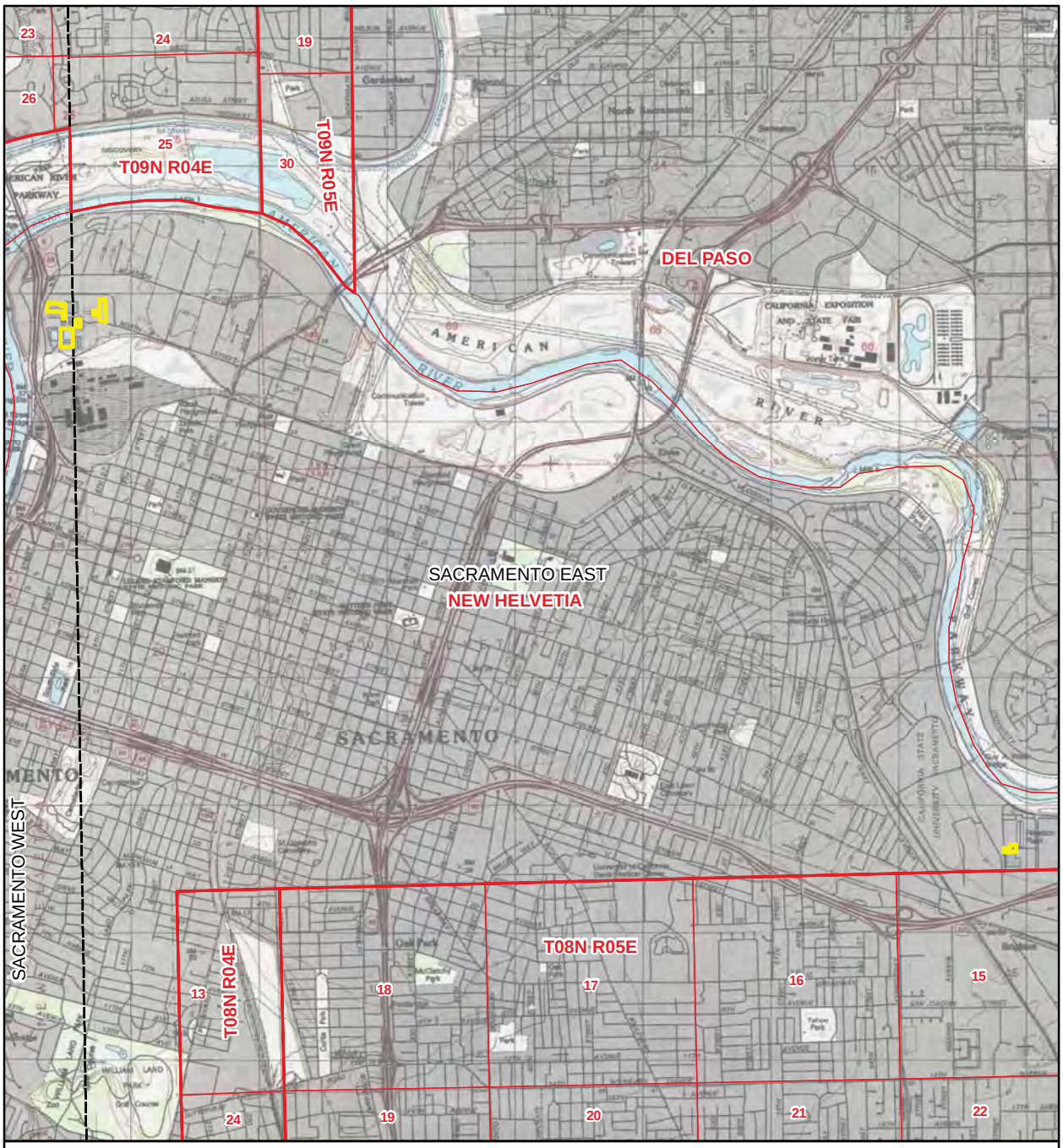
Email: laura@farwestern.com

Project Description:

The City of Sacramento is rehabilitating water treatment facilities at two water treatment plants (WTP) in Sacramento – the Sacramento River WTP at 101 Bercut Drive, and the EA Fairbairn WTP at 7501 College Town Drive. Within the existing plants particular facilities will be altered, decommissioned or demolished and rebuilt. Currently the project is funded by State and local funds but the cultural resources study is being conducted at Section 106 Standards in case additional federal funding is added later.

South of T09N R04E Sec. 25, South of T09N R04E Sec. 26; New Helvetia Landgrant
Sacramento West Quad. (see attached map)

South of T09N R04E Sec. 25, North of T08N R05E Sec. 15; New Helvetia Landgrant
Sacramento East Quad. (see attached map)



Sacramento West and Sacramento East 7.5' USGS Quadrangles,
New Helvetia Landgrant,
Sacramento County, California

Project Area

0 0.5 1
Kilometers

0 0.5 1
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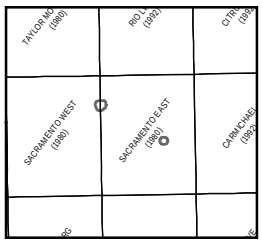

12/1/2011
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STATE OF CALIFORNIA
Edmund G. Brown Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
915 CAPITOL MALL, ROOM 364
SACRAMENTO, CA 95814
(916) 653-4082
Fax (916) 657-5390
Web Site www.nahc.ca.gov

January 3, 2012

Laura Leach-Palm
Far Western Anthropological Research Group, Inc.
2727 Del Rio Place, Suite A
Davis, CA 95618

Sent by Fax: 530-756-0811
Number of Pages: 2

Re: Proposed Sacramento Water Treatment Plants (FW #1259) , Sacramento County

Dear Ms. Leach-Palm:

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 653-4038.

Sincerely,

Debbie Pilas-Treadway
Environmental Specialist III

Native American Contacts
Sacramento County
January 3, 2012

Rose Enos
15310 Bancroft Road
Auburn , CA 95603
(530) 878-2378
Maidu
Washoe

T si-Akim Maidu
Eileen Moon,Vice Chairperson
1239 East Main St.
Grass Valley , CA 95945
(530) 477-0711
Maidu

April Wallace Moore
19630 Placer Hills Road
Colfax , CA 95713
530-637-4279
Nisenan - So Maidu
Konkow
Washoe

United Auburn Indian Community of the Auburn Rancheria
David Keyser, Chairperson
10720 Indian Hill Road
Auburn , CA 95603
530-883-2390
530-883-2380 - Fax
Maidu
Miwok

Shingle Springs Band of Miwok Indians
John Tayaba, Vice Chairperson
P.O. Box 1340
Shingle Springs , CA 95682
(530) 676-8010
(530) 676-8033 Fax
Miwok
Maidu

United Auburn Indian Community of the Auburn Rancheria
Marcos Guerrero, Tribal Preservation Committee
10720 Indian Hill Road
Auburn , CA 95603
mguerrero@auburnrancheria.com
530-883-2364
530-883-2320 - Fax
Maidu
Miwok

Shingle Springs Band of Miwok Indians
Nicholas Fonseca, Chairperson
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Miwok
Maidu

United Auburn Indian Community of the Auburn Rancheria
Gregory S. Baker, Tribal Administrator
10720 Indian Hill Road
Auburn , CA 95603
gbaker@auburnrancheria.com
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Maidu
Miwok

Shingle Springs Band of Miwok Indians
Daniel Fonseca
P.O. Box 1340
Shingle Springs , CA 95682
(530) 676-8010
(530) 676-8033 Fax
Miwok
Maidu

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Sacramento Water Treatment Plants - FW 1259, Sacramento County

FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

January 5, 2012

Gregory S. Baker, Tribal Administrator
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

Re: Cultural Resources Inventory for the Sacramento Water Treatment Plants Rehabilitation Project, City of Sacramento, Sacramento County, California.

Dear Mr. Baker,

This letter is to let you know about an ongoing cultural resources project, and to ask if you have information or issues that you would like to share about the project location.

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Thank you for your time.

Sincerely,

Laura Leach-Palm
Senior Archaeologist
Encl. 1 - Project Area Location Map

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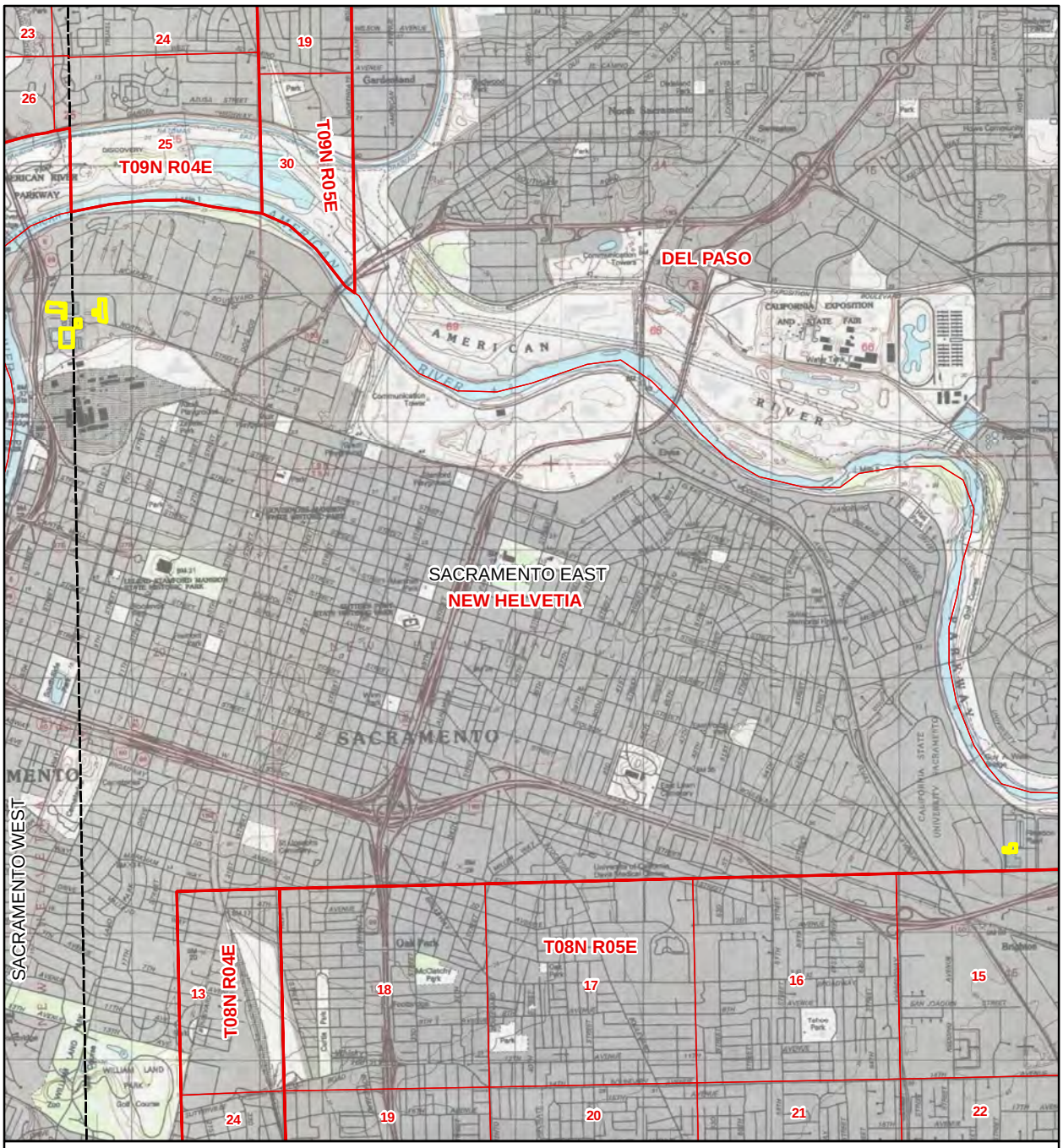
DESERT BRANCH 2860 E. FLAMINGO ROAD, SUITE E, LAS VEGAS, NEVADA 89121 • PHONE: 702-982-3691 • FAX: 702-982-3693

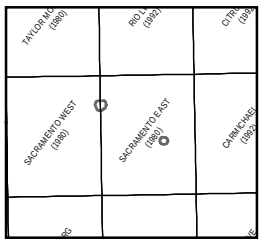


Sacramento West and Sacramento East 7.5' USGS Quadrangles,
New Helvetia Landgrant,
Sacramento County, California

0 0.5 1
Kilometers

0 0.5 1
Miles

Project Area



12/1/2011
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FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

January 5, 2012

Rose Enos
15310 Bancroft Road
Auburn, CA 95603

Re: Cultural Resources Inventory for the Sacramento Water Treatment Plants Rehabilitation Project, City of Sacramento, Sacramento County, California.

Dear Ms. Enos,

This letter is to let you know about an ongoing cultural resources project, and to ask if you have information or issues that you would like to share about the project location.

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FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

January 5, 2012

Daniel Fonseca
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle Springs, CA 95682

Re: Cultural Resources Inventory for the Sacramento Water Treatment Plants Rehabilitation Project, City of Sacramento, Sacramento County, California.

Dear Mr. Fonseca,

This letter is to let you know about an ongoing cultural resources project, and to ask if you have information or issues that you would like to share about the project location.

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FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

January 5, 2012

Nicholas Fonseca, Chairperson
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle Springs, CA 95682

Re: Cultural Resources Inventory for the Sacramento Water Treatment Plants Rehabilitation Project, City of Sacramento, Sacramento County, California.

Dear Chairperson Fonseca,

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FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

January 5, 2012

Marcos Guerrero, Tribal Preservation Committee
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

Re: Cultural Resources Inventory for the Sacramento Water Treatment Plants Rehabilitation Project, City of Sacramento, Sacramento County, California.

Dear Mr. Guerrero,

This letter is to let you know about an ongoing cultural resources project, and to ask if you have information or issues that you would like to share about the project location.

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FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

January 5, 2012

David Keyser, Chairperson
United Auburn Indian Community of the Auburn Rancheria
10720 Indian Hill Road
Auburn, CA 95603

Re: Cultural Resources Inventory for the Sacramento Water Treatment Plants Rehabilitation Project, City of Sacramento, Sacramento County, California.

Dear Chairperson Keyser,

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FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

January 5, 2012

Eileen Moon, Vice Chairperson
T si-Akim Maidu
1239 East Main Street
Grass Valley, CA 95945

Re: Cultural Resources Inventory for the Sacramento Water Treatment Plants Rehabilitation Project, City of Sacramento, Sacramento County, California.

Dear Vice Chairperson Moon,

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FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

January 5, 2012

April Wallace Moore
19630 Placer Hills Road
Colfax, CA 95713

Re: Cultural Resources Inventory for the Sacramento Water Treatment Plants Rehabilitation Project, City of Sacramento, Sacramento County, California.

Dear Ms. Moore,

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FAR WESTERN
ANTHROPOLOGICAL RESEARCH GROUP, INC.

January 5, 2012

John Tayaba, Vice Chairperson
Shingle Springs Band of Miwok Indians
P.O. Box 1340
Shingle Springs, CA 95682

Re: Cultural Resources Inventory for the Sacramento Water Treatment Plants Rehabilitation Project, City of Sacramento, Sacramento County, California.

Dear Mr. Tayaba,

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APPENDIX C

PHOTOGRAPHS OF THE SURVEY AREA

Far Western Anthropological Research Group, Inc.

Digital Photo Record

Copy of #1259 2011-12 Decxx-xx

File: IMGP0621
Date/time 12/9/2011 10:03:19 AM
Camera: PENTAX Optio W80
Subject: Overview of entry to the Sacramento River Water Treatment Plant.

View to: WNW
Accession:
Resource:

File: IMGP0622
Date/time 12/9/2011 10:03:36 AM
Camera: PENTAX Optio W80
Subject: View showing the SHRA property grade difference. Sacramento River WTP entry is in foreground; SHRA property is in the center of the photo with the trees.
View to: NW
Accession:
Resource:

File: IMGP0623
Date/time 12/9/2011 10:24:31 AM
Camera: PENTAX Optio W80
Subject: SHRA property from eastern fence.

View to: W
Accession:
Resource:

File: IMGP0624
Date/time 12/9/2011 10:24:39 AM
Camera: PENTAX Optio W80
Subject: Greenhouse frame within the SHRA property from the vicinity of the eastern fence.

View to: SW
Accession:
Resource:

File: IMGP0625
Date/time 12/9/2011 10:26:35 AM
Camera: PENTAX Optio W80
Subject: SHRA property; berm up to plant sludge pond seen in the background.

View to: SW
Accession:
Resource:

File: IMGP0626
Date/time 12/9/2011 10:30:32 AM
Camera: PENTAX Optio W80
Subject: SHRA property; One of two modern sheds on left.

View to: N
Accession:
Resource:

File: IMGP0627
Date/time 12/9/2011 10:30:49 AM
Camera: PENTAX Optio W80
Subject: SHRA property; two modernl sheds on western boundary.

View to: NW
Accession:
Resource:

File: IMGP0628
Date/time 12/9/2011 10:35:34 AM
Camera: PENTAX Optio W80
Subject: SHRA property, close up of two modern sheds.

View to: NW
Accession:
Resource:

File: IMGP0629
Date/time 12/9/2011 10:38:03 AM
Camera: PENTAX Optio W80
Subject: SHRA property, utility box in northeast corner.

View to: NE
Accession:
Resource:

File: IMGP0630
Date/time 12/9/2011 10:38:47 AM
Camera: PENTAX Optio W80
Subject: SHRA property, gardening supplies and debris in the northeast corner.

View to: NE
Accession:
Resource:

File: IMGP0631
Date/time 12/9/2011 10:39:15 AM
Camera: PENTAX Optio W80
Subject: SHRA property, gardening supplies and debris in the northeast corner.

View to: NE
Accession:
Resource:

File: IMGP0632
Date/time 12/9/2011 10:42:51 AM
Camera: PENTAX Optio W80
Subject: SHRA property; rose to each side of opening. Vegetation surrounds a relatively clear square area - possibly the site of an old house?
View to: NW
Accession:
Resource:

File: IMGP0633
Date/time 12/9/2011 10:54:27 AM
Camera: PENTAX Optio W80
Subject: SHRA property; overview of an approximately seven-foot diameter Cottonwood tree in the southeast corner. Crew member is standing at the base of the tree.
View to: E
Accession:
Resource:

File: IMGP0634
Date/time 12/9/2011 10:54:42 AM
Camera: PENTAX Optio W80
Subject: SHRA property; overview of an approximately seven-foot diameter Cottonwood tree in the southeast corner. Crew member is standing at the base of the tree.
View to: E
Accession:
Resource:

File: IMGP0635
Date/time 12/9/2011 11:01:37 AM
Camera: PENTAX Optio W80
Subject: SHRA property, overview of greenhouse frame. Estern fence is behind the photographer.
View to: S
Accession:
Resource:

File: IMGP0636
Date/time 12/9/2011 11:10:02 AM
Camera: PENTAX Optio W80
Subject: Rectangular parcel east of the SHRA property. A road may traverse this area.
View to: S
Accession:
Resource:

File: IMGP0637
Date/time 12/9/2011 11:25:32 AM
Camera: PENTAX Optio W80
Subject: Sacramento River Water Treatment Plant (SRWTP), overview of Sludge Lagoon #4.
View to: N
Accession:
Resource:

File: IMGP0638
Date/time 12/9/2011 11:27:36 AM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of berm on east side of Sludge Lagoon #4; SHRA property to the right of the photo.
View to: N
Accession:
Resource:

File: IMGP0639
Date/time 12/9/2011 11:30:09 AM
Camera: PENTAX Optio W80
Subject: CONFIDENTIAL
View to: N
Resource:
Accession:

File: IMGP0640
Date/time 12/9/2011 11:33:27 AM
Camera: PENTAX Optio W80
Subject: CONFIDENTIAL
View to: NE
Resource:
Accession:

File: IMGP0641
Date/time 12/9/2011 11:33:42 AM
Camera: PENTAX Optio W80
Subject: CONFIDENTIAL
.
View to: NE
Resource:
Accession:

File: IMGP0642
Date/time 12/9/2011 11:35:46 AM
Camera: PENTAX Optio W80
Subject: CONFIDENTIAL
View to: N/A
Resource:
Accession:

File: IMGP0643
Date/time 12/9/2011 11:35:53 AM
Camera: PENTAX Optio W80
Subject: CONFIDENTIAL
View to: N/A
Resource:
Accession:

File: IMGP0644
Date/time 12/9/2011 11:36:56 AM
Camera: PENTAX Optio W80
Subject: CONFIDENTIAL
View to: N
Accession:
Resource:

File: IMGP0645
Date/time 12/9/2011 11:37:08 AM
Camera: PENTAX Optio W80
Subject: CONFIDENTIAL

View to: N/A
Accession:
Resource:

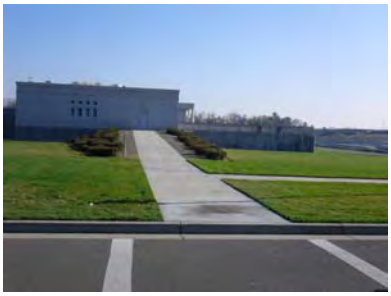
File: IMGP0646
Date/time 12/9/2011 11:41:02 AM
Camera: PENTAX Optio W80
Subject: CONFIDENTIAL
View to: NE
Accession:
Resource:

File: IMGP0647
Date/time 12/9/2011 11:47:05 AM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of Sludge Lagoon #4 with facility buildings in the background.

View to: SW
Accession:
Resource:

File: IMGP0648
Date/time 12/9/2011 11:56:55 AM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of East Filter Building with landscaped area.

View to: SE
Accession:
Resource:



File: IMGP0649
Date/time 12/9/2011 11:57:33 AM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of East Filter Building.

View to: E
Accession:
Resource:

File: IMGP0650
Date/time 12/9/2011 11:58:04 AM
Camera: PENTAX Optio W80
Subject: SRWTP, overview toward Basin #2.

View to: SW
Accession:
Resource:

File: IMGP0651
Date/time 12/9/2011 11:58:57 AM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of Basin # 2.

View to: SW
Accession:
Resource:

File: IMGP0652
Date/time 12/9/2011 11:59:05 AM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of Basin #2 with close-up of piles and soil underneath.

View to: SW
Accession:
Resource:

File: IMGP0653
Date/time 12/9/2011 11:59:33 AM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of east side of Basin #2.

View to: SW
Accession:
Resource:

File: IMGP0654
Date/time 12/9/2011 12:01:13 PM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of Floc/Sed basin east of Basin 2.

View to: SW
Accession:
Resource:

File: IMGP0655
Date/time 12/9/2011 12:07:53 PM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of the southeast corner of Basin #2. Notedepth of basin.

View to: SW
Accession:
Resource:

File: IMGP0656
Date/time 12/9/2011 12:08:59 PM
Camera: PENTAX Optio W80
Subject: SRWTP, southern end of Basin #2.

View to: W
Accession:
Resource:

File: IMGP0657
Date/time 12/9/2011 12:11:23 PM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of west side of Basin#2 from the southwest corner.
View to: NE
Accession:
Resource:

File: IMGP0658
Date/time 12/9/2011 12:34:43 PM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of the south end of the 911 building in the northeast corner of the campus.
View to: NE
Accession:
Resource:

File: IMGP0659
Date/time 12/9/2011 12:39:41 PM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of the road east of the 911 building.
View to: S
Accession:
Resource:

File: IMGP0660
Date/time 12/9/2011 12:41:45 PM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of the current 911 building, this is the location for the High Service Pump Station.
View to: SE
Accession:
Resource:

File: IMGP0661
Date/time 12/9/2011 12:48:16 PM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of the area designated for a road, which will require fill at this location. 911 building to the left.
View to: N
Accession:
Resource:

File: IMGP0662
Date/time 12/9/2011 12:50:55 PM
Camera: PENTAX Optio W80
Subject: SRWTP, overview of large pipes in southwest corner of the reservoir east of the 911 building.
View to: E
Accession:
Resource:

File: IMGP0663
Date/time 12/9/2011 1:16:13 PM
Camera: PENTAX Optio W80
Subject: Fairbairn Water Treatment Plant (FWTP), overview of shed that will be demolished and location of new dewatering building.
View to: NE
Accession:
Resource:

File: IMGP0664
Date/time 12/9/2011 1:19:57 PM
Camera: PENTAX Optio W80
Subject: FWTP, overview of the road edge to west of the shed.
View to: NE
Accession:
Resource:

File: IMGP0665
Date/time 12/9/2011 1:23:08 PM
Camera: PENTAX Optio W80
Subject: FWTP, overview of the project area from the west end of the road.
View to: E
Accession:
Resource:

File: IMGP0666
Date/time 12/9/2011 1:24:58 PM
Camera: PENTAX Optio W80
Subject: FWTP, overview of the project area from the road that lies south of the buried reservoir. Shed is background center.
View to: N
Accession:
Resource:

File: IMGP0667
Date/time 12/9/2011 1:26:14 PM
Camera: PENTAX Optio W80
Subject: FWTP, overview of the road to the buried reservoir.
View to: E
Accession:
Resource:

APPENDIX D

SITE RECORDS

Confidential