Memorandum

To: KEVIN HOVEY, Chief
   District 11 Environmental Analysis Branch D

From: MICHELLE BLAKE
   Associate Environmental Planner
   District 11 Environmental Analysis Branch D

Date: March 21, 2018

File: STPL-5169(049)
   City of El Centro
   Imperial Ave Extension

Subject: SCOPE DECREASE FOR THE IMPERIAL AVENUE EXTENSION PROJECT IN THE CITY OF EL CENTRO

The City of El Centro has down-scoped the proposed Imperial Avenue Extension project from the original scope of work analyzed in the Historic Property Survey Report package or Finding of Effect document. The City now proposes to build four through traffic travel lanes with curb/cutter/sidewalk on both sides of Imperial Avenue between Wake Avenue and Interstate 8, and build a two-lane facility from Wake Avenue to McCabe Road. The two-lane facility south of Wake Avenue will be constructed on the east half of the ultimate ROW, and only the east half of ROW will be purchased at this time. This would result in curb/gutter/sidewalk only on the east side of the new two-lane road.

The modified scope reduces impacts to agricultural fields located on the west side of the project site. The reduction in the project scope does not affect the original Section 106 findings, which concluded that there would be no adverse effect to historic properties and mitigation was not required.
1. UNDERTAKING DESCRIPTION AND LOCATION

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<th>County</th>
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<th>Location</th>
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<tr>
<td>11</td>
<td>Imperial</td>
<td>STPL 5169 (049)</td>
<td>Imperial Avenue, south of Interstate 8</td>
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The environmental review, consultation, and any other actions required by applicable Federal environmental laws for this project are being, or have been, carried out by the California Department of Transportation (Caltrans) pursuant to 23 United States Code 327 and the Memorandum of Understanding (MOU) dated December 23, 2016, and executed by the Federal Highway Administration (FHWA) and Caltrans.

The studies for this undertaking were carried out in a manner consistent with Caltrans’ regulatory responsibilities under Section 106 of the National Historic Preservation Act (NHPA) (36 Code of Federal Regulations Part 800) and pursuant to the January 2014 First Amended Programmatic Agreement among the Federal Highway Administration, the Advisory Council on Historic Preservation, the California State Historic Preservation Officer, and the California Department of Transportation Regarding Compliance with Section 106 of the National Historic Preservation Act (Section 106 Programmatic Agreement), as well as under Public Resources Code (PRC) 5024 and pursuant to the January 2015 Memorandum of Understanding Between the California Department of Transportation and the California State Historic Preservation Office Regarding Compliance with Public Resources Code Section 5024 and Governor’s Executive Order W-26-92 (5024 MOU) as applicable.

**Project Description:**

The City of El Centro, in cooperation with the FHWA, proposes to extend Imperial Avenue from Interstate 8 (I-8) to McCabe Road as a new 4-lane facility within the southern portion of the City of El Centro. The Imperial Avenue Extension Project (project) is located immediately south of I-8 in the City of El Centro, in Imperial County, California (Attachment 1: Figure 1). It is located on the U.S. Geological Survey (USGS) 7.5-minute topographical map, El Centro quadrangle (see Attachment 1: Figure 2). The Area of Potential Effect (APE) of the proposed extension project transects portions of Tracts 55, 59, 60, 81, 84, 85, and 86 of Sections 7, 18, and 19, Township 16 South, Range 14 East. The APE encompasses approximately 37.8 acres in area. The proposed 1.36-mile roadway extension would have a 110-foot right-of-way to accommodate a 4-lane roadway with a 14-foot median, and a 5.5-foot sidewalk and 6.5-foot native shoulder backing on both sides. The project would also construct a 2-lane roadway segment to connect the separated portions of Wake Avenue located west and east of the Imperial Avenue extension, as well as a 2-lane roadway segment to connect to the portion of Danenberg Drive located east of the extension. The project would also underground the Date Drain and Dahlia Canal Lateral 1. The project will be phased as follows:

- Phase I–I-8 to Wake Avenue
- Phase II–Wake Avenue to Danenberg Drive
- Phase III–Danenberg Drive to Valleyview Avenue
- Phase IV–Valleyview Avenue to McCabe Road
2. AREA OF POTENTIAL EFFECTS

In accordance with Section 106 Programmatic Agreement Stipulation VIII.A, the APE for the project was established in consultation with Koji Tsunoda (Professionally Qualified Staff [PQS] as principal investigator in Prehistoric Archaeology) and Bing Luu (Caltrans District 11 Local Assistance Engineer), on November 7, 2017. The APE map is attached to this Historic Property Survey Report (see Attachment 1: Figure 3).

The APE is located immediately south of I-8 in the City of El Centro, in Imperial County, California, consisting of an undeveloped section of dirt road that runs north from McCabe Road, to just south of I-8. The APE, approximately 80 to 170 meters wide (262 to 558 feet), also includes undeveloped dirt road segments of Danenberg Drive, and Wake Avenue. This alignment transects portions of Tracts 55, 59, 60, 81, 84, 85, and 86 of Sections 7, 18, and 19, Township 16 South, Range 14 East. The APE encompasses approximately 37.8 acres in area.

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

- Native American Heritage Commission
  - RECON contacted the Native American Heritage Commission (NAHC) for a Sacred Lands Files search and contact list on April 10, 2017 (see Appendix B of Attachment 2: Archaeological Survey Report).
  - The NAHC responded on April 12, 2017 stating that the sacred lands file search did not identify any Native American cultural resources within the APE.

- Native American Tribes, Groups and Individuals
  - The City of El Centro sent consultation letters to 21 Native American individuals and organizations identified by the NAHC who may have an interest in cultural resources within the APE consistent with the requirements of Section 106 of the NHPA.
  - The City of El Centro received a response from the Viejas Band of Kumeyaay Indians requesting that a Kumeyaay cultural monitor be on-site during ground disturbing activities. None of the other Native American individuals and organizations or historical organizations provided responses.

- Local Historical Society / Historic Preservation
  - The City of El Centro sent consultation letters to three historical organizations who may have an interest in cultural resources within the APE consistent with the requirements of Section 106 of the NHPA. None of the historical organizations provided responses to the consultation letters (Attachment 3).
4. SUMMARY OF IDENTIFICATION EFFORTS

☒ National Register of Historic Places (NRHP) ☒ California Points of Historical Interest
☒ California Register of Historical Resources (CRHR) ☒ California Historical Resources Information System (CHRIS)
☒ National Historic Landmark (NHL) ☒ California Historical Landmarks (CHL)
☒ Other Sources consulted:
  • Imperial Valley Desert Museum Society
  • Imperial Valley Historic Society
  • San Diego State University-Imperial Valley Borderlands Institute

Results:
  • No archaeological deposits were identified within the APE during the survey (see Attachment 2). A previously documented and recorded historic structure was located within the APE boundary. P-13-008655 was identified and recorded in 2001 as a portion of the Date Drain, which extends the length of the project APE. An additional historic structure was identified and documented within the APE as a result of the current study. Dahlia Canal Lateral 1 is located adjacent to and runs parallel with the Date Drain, extending through much of the length of the APE, from McCabe Road in the south, to the intersection with Danenberg Drive in the north. The location of Dahlia Canal Lateral 1 places it within direct impacts associated with the project (Attachment 4: Finding of No Adverse Effect [FONAE]).

5. PROPERTIES IDENTIFIED

☒ The following properties within the APE are considered eligible for inclusion in the NRHP and/or CHLs for the purposes of this project only because evaluation was not possible, in accordance with Section 106 PA Stipulation VIII.C.4 and as applicable PRC 5024 MOU Stipulation VIII.C.4.
  • P-13-008655, the Date Drain, was identified and recorded by Frank Lortie (2001) as part assumption of eligibility (Attachment 5).
  • The Dahlia Canal Lateral 1 was identified and recorded by RECON (see Attachment 4: FONAE) as part of the Imperial Avenue Extension Project. Per an email dated September 18, 2017, the Cultural Studies Office approved this assumption of eligibility (see Attachment 5).

☒ Richard Shultz, who meets the PQS Standards in Section 106 PA Attachment 1 and as applicable PRC 5024 MOU Attachment 1 as a(n) Principal Architectural Historian, has determined that the only other properties present within the APE meet the criteria for Section 106 PA Attachment 4 (Properties Exempt from Evaluation) and as applicable PRC 5024 MOU Stipulation VIII.C.1 and Attachment 4.
34 residential homes are located in immediate proximity of the project area (within 30 meters (100 feet). None of these residences are considered eligible and all residences are exempt from further evaluation pursuant to Section 106 PA Stipulation VIII.C.1 and Attachment 4 property type 2 of the PA. Aerial photographs indicate that these residential properties were constructed between 2002 and 2006.

6. FINDING FOR THE UNDERTAKING

Caltrans, pursuant to Section 106 PA Stipulation X.B.2 and if applicable PRC 5024 MOU Stipulation X.B.2, has determined a Finding of No Adverse Effect (without Standard Conditions) is appropriate for this undertaking, and requests SHPO’s concurrence in this determination (see Attachment 4: FONAE). No State-owned cultural resource is involved. Therefore, PRC 5024 MOU does not apply to this undertaking.

7. CEQA CONSIDERATIONS

Not applicable.

8. LIST OF ATTACHED DOCUMENTATION

Project Vicinity, Location, and APE Map
Attachment 1: Figures 1–3

Archaeological Survey Report (ASR)
Attachment 2: Shultz (2017) Archaeological Survey for the Imperial Avenue Extension Project, El Centro, California

CSO Approval of Assumption of Eligibility:
Attachment 5: Bevk Neeb (2017) Email dated September 18, 2017

Other:
Attachment 3: Section 106 Consultation with Local Historical Groups
Attachment 4: Shultz (2017) Finding of No Adverse Effect for the Imperial Avenue Extension Project, El Centro, California.
9. HPSR PREPARATION AND CALTRANS APPROVAL

Prepared by: Richard D. Shultz, MA, RPA
PQS Equivalent, Principal Investigator in
Prehistoric Archaeology and Principal Architectural Historian
RECON Environmental, Inc.
1927 Fifth Avenue, San Diego, CA 92101

Date: January 16, 2018

Reviewed for Approval by: Janice Calpo
Caltrans Headquarters PQS Principal Architectural Historian

Date: Jan 22, 2018

Approved by: Kevin Hovey
District 11 EBC Environmental Analysis Branch D

Date: 1/22/18
ATTACHMENTS
ATTACHMENT 1

Figures
FIGURE 1
Regional Location
FIGURE 2

Project Location on USGS Map
ATTACHMENT 2

Archaeological Survey for the
Imperial Avenue Extension Project, El Centro, California
ARCHEOLOGICAL SURVEY FOR THE
IMPERIAL AVENUE EXTENSION PROJECT,
EL CENTRO, CALIFORNIA
Federal Aid Number: STPL 5169 (049)

Prepared by:  Richard D. Shultz, Principal Investigator/Archaeologist
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Reviewed by:  Koji Tsunoda, Environmental Analysis Branch D, Professionally Qualified
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(619) 688-0188

Approved by:  Kevin Hovey, Chief Environmental Analysis Branch D, Professionally
Qualified Staff Principal Investigator in Prehistoric Archaeology
California Department of Transportation District 11
Environmental Division, MS 242
4050 Taylor Street
San Diego, CA 92110
(619) 688-0240

USGS Quadrangle: El Centro (7.5' series, 1979)
Acreage: 37.8 acres
Cultural Resources identified: P-13-008655,

November 2017
Archaeological Survey Report for the Imperial Avenue Extension Project, El Centro, California

Prepared for
City of El Centro Public Works
307 West Brighton Avenue
El Centro, CA 92243

Prepared by
RECON Environmental, Inc.
1927 Fifth Avenue
San Diego, CA 92101
P 619.308.9333

RECON Number 7972
November 28, 2017

Richard D. Shultz, M.A., RPA
Principal Investigator/Archaeologist
NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION

Authors: Richard D. Shultz, M.A., RPA
Consulting Firm: RECON Environmental Inc.
1927 Fifth Avenue
San Diego, CA 92101-2358
Report Date: November 28, 2017
Report Title: Archaeological Survey Report for the Imperial Avenue Extension Project, Imperial County, California.
Submitted to: City of El Centro
1275 W. Main Street
El Centro, CA 92243
Contact: Adriana C. Nava, AICP
Contract Number: RECON Number 7972
USGS Quadrangle Map: 7.5 Minute, El Centro 1976 (1979)
Keywords: Date Drain (P-13-008655); Dahlia Canal Lateral 1; Imperial County; Imperial Irrigation District
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   4: View of Danenberg Drive Extension; View East from Project Centerline
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   6: View of Wake Avenue Extension; View West from Project Centerline
   7: View of Wake Avenue Extension; View West from Easternmost Perimeter of Extension
## Acronyms

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<td>Before Present</td>
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<td>I-8</td>
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<td>NHPA</td>
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<td>USGS</td>
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1.0 Summary of Findings

The Imperial Avenue Extension Project (project) would extend Imperial Avenue from Interstate 8 (I-8) to McCabe Road as a new 4-lane facility in the southern portion of the city of El Centro, Imperial County, California. The proposed 1.36-mile roadway extension would have a 110-foot right-of-way to accommodate a 4-lane roadway with a 14-foot median, and 5.5-foot sidewalks with 6.5-foot native shoulder backing on both sides. The project would integrate with the previously Federal Highway Administration analyzed Interstate 8/Imperial Avenue Interchange Reconstruction project (California Department of Transportation [Caltrans] 2004). The project is located immediately south of I-8 and north of McCabe Road, and midway between South Clark Road to the east and South La Brucherie Road to the west, in the City of El Centro, Imperial County, California.

The purpose of the survey was to identify any archaeological resources located within or adjacent to the project area (Appendix A: Figure 1, 2, and 3). The project area is equivalent to approximately 37.8 acres. A records search at the South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS) identified one previously recorded cultural resource (P-13-008655) within the project area. No additional cultural resources were indicated within the one-mile record search buffer.

The project area was surveyed on April 25, 2017. Portions of the project area lie within fallowed and recently disced agricultural fields, improved common areas along residential streets, and adjacent to active agricultural irrigation infrastructure. Ground visibility within the project area was good, with only sparse stands of rushes in the Date Drain obscuring the bottom of the drainage. No archaeological deposits were identified within the project area during the survey; a previously documented and recorded historical structure was located within the project area boundary. P-13-008655 was identified and recorded in 2001 as a portion of the Date Drain, which extends the length of the project area. The northern, eastward trending segment of P-13-008655 was determined not eligible for inclusion in the National Register by the California State Historic Preservation Officer in 2002. An additional historical structure was identified and documented within the project area as a result of the current study. Dahlia Canal Lateral 1 is located adjacent to and runs parallel with the Date Drain, extending through much of the length of the project area, from McCabe Road in the south, to the intersection with Danenberg Drive in the north. The location of Dahlia Canal Lateral 1 appears to place it within direct impacts associated with the project.

It is the policy of Caltrans to avoid cultural resources whenever possible. Further investigations may be needed if the cultural resources cannot be avoided by the project. If buried cultural materials are encountered during construction, it is Caltrans policy that work stop in that area until a qualified archaeologist can evaluate the nature and significance of the find. An additional survey will be required if project changes include areas not previously surveyed.
2.0 Introduction

This report details background information, methods, and results of the archaeological resources survey for the Imperial Avenue Extension Project. An on-foot survey of the project area was conducted on April 25, 2017, by RECON Environmental, Inc. (RECON) archaeologist Richard Shultz. Mr. Shultz earned a Master of Arts in Cultural Resources Management from Sonoma State University, and is a Registered Professional Archaeologist. He has 30 years of field experience involving historic and prehistoric cultural resources across California. He qualifies as a Caltrans equivalent professionally qualified staff person as a principal investigator in prehistoric archaeology.

3.0 Project Location and Description

The project is located immediately south of I-8 in the City of El Centro, Imperial County, California (see Appendix A: Figure 1). It is located on the U.S. Geological Survey (USGS) 7.5-minute topographical map, El Centro quadrangle (see Appendix A: Figure 2). The project area of the proposed extension transects portions of Tracts 55, 59, 60, 81, 84, 85, and 86 of Sections 7, 18, and 19, Township 16 South, Range 14 East. The project area encompasses approximately 37.8 acres. The project would extend Imperial Avenue from I-8 to McCabe Road as a new 4-lane facility within the southern portion of the City of El Centro. The proposed 1.36-mile roadway extension would have a 110-foot right of way to accommodate a 4-lane roadway with a 14-foot median, and a 5.5-foot sidewalk and 6.5-foot native shoulder backing on both sides. The project would also construct a 2-lane roadway segment to connect the separated portions of Wake Avenue located west and east of the Imperial Avenue extension, as well as a 2-lane roadway segment to connect to the portion of Danenberg Drive located east of the extension. The project would also underground the Date Drain and Dahlia Canal Lateral 1. The project will be phased as follows:

- Phase I–I-8 to Wake Avenue
- Phase II–Wake Avenue to Danenberg Drive
- Phase III–Danenberg Drive to Valleyview Avenue
- Phase IV–Valleyview Avenue to McCabe Road

4.0 Sources Consulted

An archaeological records search was requested from the CHRIS SCIC for the project area with a one-mile radius search buffer (Table 1). The search was completed on April 17, 2017, by SCIC personnel. The search included a review of the National Register of Historic Places for Imperial County, National Historic Landmarks, California Register of Historical Resources, California Registered Historical Landmarks, California Points of Historical Interest, historic resources inventory files, archaeological inventory files, a bibliography of previous cultural resources investigations, and various historic maps. Per records search data only a very small percentage of the project area has been previously surveyed. Approximately 290 feet of the eastern segment of the proposed Wake Avenue project area
was surveyed for the Desert Estates South Subdivision (Table 2). Approximately 190 feet of the northern terminus of the project area were surveyed for the Interstate 8/Imperial Avenue Interchange Reconstruction project (Caltrans 2004), and resulted in the identification and recording of the Date Drain (P-13-0008655), which extends within the project area. Approximately 1,440 feet of the southern portion of the project area was studied by WIRTH Associates as part of a large transmission line project. This study footprint is suspect, however, as transmission line surveys rarely encompass 3,100-foot-wide corridors. The study corridor provided by SCIC appears to be the footprint created by the Information Center encompassing a quarter-mile buffered records search area, and not the actual on-the-ground survey corridor. Apart from the Date Drain, no other resources were identified within the one-mile search buffer. A portion of the previously recorded Date Drain was determined not eligible for listing on the National Register of Historic Places by the California State Historic Preservation Officer in 2002 (Caltrans 2004:Exhibit 24).

<table>
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RECON contacted the Native American Heritage Commission (NAHC) on April 10, 2017 via a Sacred Lands Files search letter requesting the identification of spiritually significant and/or sacred sites, traditional use areas, and a list of local Native American tribes, bands, or individuals who may have an interest in cultural resources within the project area. The
NAHC responded on April 12, 2017 stating that the sacred lands file search did not identify any Native American cultural resources within the project area (Appendix B). The NAHC also provided a list of 21 Native American individuals and organizations that may have an interest in cultural resources within the project area. The City subsequently sent letters to all 21 Native American individuals and organizations identified by the NAHC, as well as three historic organizations, consistent with the requirements of Section 106 of the NHPA. The City received a response from the Viejas Band of Kumeyaay Indians requesting that a Kumeyaay cultural monitor be on-site during ground disturbing activities. None of the other Native American individuals and organizations or historical organizations provided responses.

5.0 Background

5.1 Environmental Setting

The project area encompasses a portion of a semi-formal, unimproved dirt, and partially paved road network immediately south of Interstate 8, surrounded by active agricultural fields and recently constructed housing tracts. The project area also includes portions of existing agricultural lands and water delivery network infrastructure. Elevation for the project ranges from minus 22 feet above mean sea level at the southern terminus of the project area to minus 35 feet above mean sea level at the northeastern lateral segment. Topography of the project area consists of leveled agricultural fields, a slightly raised road bed for the unimproved sections of Imperial Avenue, and raised banks of the Date Drain and Dahlia Canal Lateral 1. Predominant vegetation communities in the project area and vicinity consist of cultivars, non-native grasses, saltbush (*Atriplex lentiformis*), and a eucalyptus windbreak.

The project area is underlain by deep deltaic alluvial fills deposited by the Colorado River. Soils in the project area are described as Imperial silty clay (114) and Imperial-Glenbar silty clay, 0 to 2 percent slopes (115). The Imperial silty clay is characterized by pinkish gray and light brown silty clay to a depth of 60 inches or more. Efflorescences of gypsum and brown stains are common in the cracks and pores. In some places the surface layer is silty clay loam or clay loam. Similarly, Imperial-Glenbar typically has a surface layer that is pinkish gray silty clay loam to about 12 inches. The underlying material is pinkish gray and light brown silty clay to a depth of 60 inches. Efflorescences of gypsum and brown stains are common in the cracks and pores (U.S. Department of Agriculture 1981).

5.2 Cultural Setting

The prehistory of Imperial County may be divided into four major temporal periods: Pre-projectile, Paleoamerican, Archaic, and Late Prehistoric. These time periods have regional expression through various regional archaeological complexes or archaeological cultures.
5.2.1 Pre-projectile Period

A Pre-projectile Period is posited by some researchers for the greater Southwestern United States. This time period is represented by the Malpais Complex. The term Malpais was first coined by Malcolm Rogers to refer to very heavily patinated and weathered artifacts that he reasoned were quite old. Rogers later dropped the term and reclassified these materials as San Dieguito I (Rogers 1939). The term Malpais was later resurrected by Julian Hayden to refer to assemblages of very heavily varnished choppers, scrapers, and other core-based tools typically found on old desert pavement areas. Malpais materials are posited to predate the San Dieguito materials, but obtaining radiocarbon or other absolute dates for these materials has proven elusive (e.g., Begole 1981; Childers 1980; Davis et al. 1980; Hayden 1976). Malpais sites are characterized by “bare circles” (i.e., cleared circles or house remains) that have been cleared from volcanic landscapes. Malpais sites are located above drainages on flat, rolling terrain, and a short distance up the side of a slope. Trails are a common feature at these sites (California State Parks 2005). Other researchers are quite skeptical of this posited period (e.g., Schaefer 1994). The Yuha Burial Site and the Yuha Pinto Wash Site, both located in the Yuha Desert south of the project, are two controversially dated sites (Moratto 1984).

5.2.2 Paleoamerican Period

The earliest part of the Paleoamerican Period in the region is represented by the Fluted Point Tradition. Fluted points have been well documented and dated for the Rocky Mountain and Great Plains areas (Haury 1975; Hester 1972; Jennings 1978; McGuire and Schiffer 1982). In these regions, they are often associated with big game kill sites and are interpreted to reflect a Big Game Hunting Tradition. In the Great Basin and California, however, their dating is more problematic. They are typically found along the shorelines of Pleistocene playas, along fossil streams, and in passes connecting such places (Fredrickson 1973; Riddell and Olsen 1969). Some researchers suggest that this reflects a lacustrine or riparian adaptation ancestral to the Western Pluvial Lakes Tradition or San Dieguito–Lake Mojave Complex that developed after about 12,000 Before Present (BP) (Moratto 1984).

The San Dieguito–Lake Mojave Complex is thought to have existed approximately 10,000 to 7,000 years ago during a time of greater rainfall than the present in southeastern California (Warren and Crabtree 1986). The assemblage consists of heavy percussion, core, and flake-based tools: domed and keeled choppers, planes, and scrapers. One also finds light-percussion flaked spokeshaves, flaked-stone crescentics, and leaf-shaped projectile points. In the Mojave Desert, one also finds the distinctive Lake Mojave and Silver Lake stemmed projectile points. Fluted points are also occasionally found on San Dieguito–Lake Mojave surface sites (Moratto 1984). Milling equipment is apparently rare or absent (Warren and Crabtree 1986:184). Subsistence is generally thought to have been focused on highly ranked resources such as large mammals. This subsistence strategy may have encouraged a pattern of relatively high residential mobility. Some cleared circles, trails, and geoglyphs in the Colorado Desert have been tentatively included in the San Dieguito–Lake Mojave Complex. Temporal placement of these sites is based on degree of embeddedness in desert pavements and patination, a dating method that has not been proven reliable (Hayden 1976; McGuire and Schiffer 1982; Rogers 1939).
5.2.3 Archaic Period

The early Archaic Period is represented by the Pinto Complex (7,000 to 4,000 BP) in the Colorado Desert. There is an apparent shift to a more generalized economy and a gradually increased emphasis on the exploitation of plant resources. The ground stone artifacts associated with this complex are typically thin slabs with smooth, highly polished surfaces, not the basin metates and manos typical of later times. Rogers (1939:52-53) argued that the thin, polished “slab metates” were not milling stones, but rather were used to process fibrous leaves or skins (Susia 1964; Wallace 1962; Warren 1984). Projectile points consist of the distinctive Pinto Series atlatl points made by hard hammer percussion technique. The assemblage also includes scrapers, knives, scraper-planes, and choppers. The mixed core-based tool assemblage of the Pinto Complex may indicate a range of adaptations to a more diversified set of plant and animal resources brought about by a generalized desiccating trend in the West, punctuated by occasional, more mesic times. The early component at the Indian Hill Rockshelter in Anza–Borrego Desert State Park, approximately 22 miles west of the project area, has been dated to this period. In general, archaeological sites dating to this period are rare in the Colorado Desert (Cleland et al. 2003).

According to Schaefer (1994), Indian Hill Rockshelter (CA-SDI-2537), located in the eastern foothills of the Jacumba Mountains, is the only well-documented site in the Colorado Desert of this period. A radiocarbon date of 4070±100 years BP was obtained from a burial. This site contained rock-lined features, Elko points, core tools, hammerstones, manos reused as cooking stones and in hearths, brown ware and buff ware ceramics, ceramic pipes, and shell beads (MacDonald 1992). The ceramics were found in the upper levels of the deposit and date to a later site component. MacDonald (1992) suggests that Indian Hill Rockshelter was a multi-component site used as a food storage facility with numerous rock-lined features, occupied during the winter and spring.

The Pinto Complex is the Gypsum Complex, or Amargosa Complex (4000 to 1500 BP). This complex is characterized by the presence of fine, pressure-flaked Elko and Humboldt series and Gypsum-type projectile points. The assemblage also contains leaf-shaped points; rectangular-based knives; flake scrapers; T-shaped drills; and occasional large scraper-planes, choppers, and hammerstones. Manos and basin metates become relatively common, and the mortar and pestle were introduced late in the complex (Warren 1984:416). The fluorescence of tool types and the refinement of milling equipment suggest a more generalized and effective adaptation to desert conditions in the Greater Southwest (Warren and Crabtree 1986).

5.2.4 Late Prehistoric Period

The Late Prehistoric Period, also known as the Patayan Complex, begins by approximately 1500 BP. At this time, the archaeological record in the Colorado Desert shifts to the Patayan Complex (e.g., Schaefer 1994). The Patayan Complex, first termed by Colton (1945), is characterized by dramatic cultural change and an expanded population in the Salton Trough. Paddle and anvil pottery was introduced, probably from Mexico by way
of the Hohokam Complex of the middle Gila River area (Schroeder 1975, 1979; Rogers 1945). Lower Colorado Buff Ware, as described in the Patayan Complex, appears by about 1250 BP in the Colorado Desert (Waters 1982; Hildebrand 2003). Tizon Brownware, found in San Diego County, northern Baja California, and the western Salton Basin, occurs slightly later (Griset 1996).

The Patayan Complex is divided into three phases: Patayan I, II, and III. The terms Yuman I, II, and III—as termed by M. Rogers (1945)—coincide with the three Patayan periods with slight differences in terms of ceramic types and are defined by changes in ceramic types and the filling and desiccation of Lake Cahuilla (Waters 1982; Weide 1976).

The settlement system of Patayan I (1250–950 BP) is characterized by small mobile groups living in dispersed seasonal settlements along the Colorado River. Hunting and gathering was the subsistence strategy used by these mobile groups. Yuman I people also have been described as having resided in the delta of the Colorado River from the ninth century until approximately 900 BP (Rogers 1945). A subsistence shift to floodplain horticulture occurred along the Colorado River and perhaps along the Alamo River and New River during the Patayan II Period (950–450 BP) (Baksh 1994; Forde 1931). Like elsewhere in the Southwest, principal crops were maize, beans, and squash, but mesquite was actually more important to the diet. Fish from the Colorado River was the main source of protein (Castetter and Bell 1951). The shift to Patayan II coincides with the various filling–recession episodes of Lake Cahuilla and the lacustrine environment created by the lake. Yuman II also spanned from 900 to 450 BP and is characterized with an expansion into large settlement areas because of filling of Lake Cahuilla (Rogers 1945). During Patayan III (450–20 BP), there was a population shift because of the final desiccation of Lake Cahuilla (Rogers 1945; Waters 1982). Rogers (1945) also mentioned this population shift during his discussion of the Yuman III Period.

Smaller projectile points signifying the advent of the bow and arrow appear about 1050 BP in the Colorado Desert. Cottonwood Series points predate the Desert Side-notched Series (Justice 2002:368). Also during this period, burial practices shifted from inhumations to cremations. Other culture traits generally associated with this period include increasingly elaborate kinship systems, rock art including the famous geoglyphs or ground figures found along the Colorado River, and expanded trading networks as evidenced by the presence of shell from the Pacific Ocean and Gulf of California in Colorado Desert sites (Davis 1961; McGuire and Schiffer 1982; Warren 1984; Schaefer 1994). Numerous trails that appear to date to this period throughout the Colorado Desert suggest the growing importance of long- and short-distance travel for trading expeditions, religious activities, visiting, and warfare.

The greatly increased number of Late Period archaeological sites suggests an expansion of population. The settlement pattern is characterized by small mobile groups living in seasonal settlements along the Colorado River floodplain. These locations were influenced by the filling and desiccation of Lake Cahuilla at least four times during this period (Schaefer 1994).
5.2.5 Ethnohistory

The project area was utilized prehistorically by a variety of Native American groups, including the Kumeyaay (the Kamia are a subset of this group), the Cocopah, and the Quechan. These three groups speak the language of the Yuman family of the Hokan language stock (Kroeber 1920). Short descriptions of their individual ethnographic context are outlined below.

At the time of the Spanish invasion, the Kumeyaay (also known as Kamia, Ipai, Tipai, and Diegueño) occupied the southern two-thirds of San Diego County. The term Kamia refers to the desert Kumeyaay while Ipai refers to the Kumeyaay north of Agua Hedionda to the San Luis Rey River and Tipai refers to the Kumeyaay south of Agua Hedionda to Todos Santos Bay, Mexico, and east to the Imperial Sand Dunes. The Kumeyaay lived in semi-sedentary, politically autonomous villages or rancherias. A settlement system typically consisted of two or more seasonal villages with temporary camps radiating away from these central places (Cline 1984). For example, the Kwamai (or Kwaaymii) clan spent their summers in the Laguna Mountains and their winters in the desert a few miles to the east of the project area (viz. Mason Valley, Vallecito Creek, Carrizo Creek) (Cline 1984:12-19; Spier 1923:306).

The Kumeyaay economic system consisted of hunting and gathering, with a focus on small game, acorns, grass seeds, and other plant resources. The most basic social and economic unit was the patrilocal extended family. A wide range of tools was made of both locally available and imported stone, including scrapers, choppers, flake-based cutting tools, and biface knives. Ground stone objects include mortars and pestles, and manos and metates typically made of locally available fine-grained granite. The Kumeyaay made fine baskets of either coiled or twined construction. The Kumeyaay also made pottery, using the paddle-and-anvil technique. Most were a plain brown utility ware called Tizon Brownware, but some were decorated (May 1978; Meighan 1954; Spier 1923).

Trade was an important feature of Kumeyaay subsistence. Coastal groups traded salt, dried seafood, dried greens, and abalone shells to inland and desert groups for products such as acorns, agave, mesquite beans, and gourds (Almstedt 1982:10; Cuero 1970:33; Luomala 1978:602). Travel and trade were accomplished by means of an extensive network of trails. Kumeyaay living in the mountains of eastern San Diego County frequently used these trails to travel down to the Kamia settlement of Xatopet on the east/west portion of the Alamo River to trade and socialize in winter (Castetter and Bell 1951; Gifford 1918:168; Spier 1923:300; Woods 1982).

The Kamia traditional territory included the southern Imperial Valley from the latitude of the southern half of the Salton Sea to well below what is the U.S.–Mexico international border (Forbes 1965; Luomala 1978:593). Their main settlements were along the New and Alamo rivers (Gifford 1931).

Subsistence among the Kamia consisted of hunting and gathering, and floodplain horticulture (Barker 1976; Gifford 1931). In normal years, the Colorado River would overflow its banks in the spring and early summer and fill rivers such as the New and
Alamo. When the floodwater receded, the Kamia would plant in the mud. A dam was maintained at Xatopet on the east/west portion of the Alamo River to control water flow and allow farming in years when water flow was insufficient (Castetter and Bell 1951:43). Gifford (1931:22) and Castetter and Bell (1951:43) suggested these were recent adaptations and not traditional life ways. Bean and Lawton (1973), Lawton and Bean (1968), and Shipek (1988) argue that irrigation was indigenous.

The Kamia’s major food staple was mesquite and screwbean, called by the Kamia anxi and iyix, respectively (Gifford 1931:23). Seeds of the ironwood (Palo fierro) and palo verde were also used. Neither palo verde nor ironwood was considered a particularly desirable food resource (Castetter and Bell 1951:195-196). Acorns were at times an important food. They were gathered in the mountains to the west of Kamia territory in October and acquired through trade from the southern Kumeyaay (Gifford 1931).

Hunting contributed to the diet in a minor way in terms of overall caloric intake, but provided valuable protein, and skin and bone for clothing, blankets, and tools. Small game, primarily rabbits, was most frequently taken, using bow and arrow or rabbit stick (macana). Sometimes fires were set along sloughs to drive rabbits out. Individuals with bow and arrow also hunted deer and mountain sheep. Fish were also taken in sloughs with bow and arrow, by hand, hooks, basketry scoops, and seine nets (Gifford 1931:24).

The Cocopah lived on the west side of the Colorado River delta from the tidewater area, north from a little above the latitude of Volcano Lake or Cerro Prieta to several miles south of the US–Mexico border (Castetter and Bell 1951:52; Gifford 1933:261; Kroeber 1920). Like other river Yumans, the Cocopah settlements were dispersed residential areas or rancherias, not close-knit villages (Castetter and Bell 1951:53).

Cocopah subsistence was similar to other river Yuman people, although their location in the Colorado River delta area had a somewhat different environment from that of the upstream tribes. The Colorado River frequently changed course within the general floodplain throughout the area below the Grand Canyon. The river formed very active meanders in the delta region, requiring settlement and field movement among the Cocopah and other delta peoples (Castetter and Bell 1951; Sykes 1937). Mesquite and screwbean grew in profusion and formed a dietary staple of the Cocopah. Other important wild food sources of the delta region were “wild rice or wild wheat,” and quelite or amaranth (Castetter and Bell 1951:192). The Cocopah planted a variety of maize, pumpkins, tepary beans, cowpeas, muskmelons, watermelons, and heshmicha (grain resembling wheat), and sugar cane (Gifford 1933).

Hunting was relatively unimportant and was confined primarily to the hills and mountains. Fish was the most important animal food among the Lower Colorado River peoples. The Cocopah fished in the Colorado and Hardy rivers, and occasionally parties would fish along the Gulf of California. Fish were also taken with bow and arrow, as well as by spears, gill nets, and dip nets (Castetter and Bell 1951:216; Gifford 1933:268).

The Cocopah frequently visited the mountainous Paipai country west of the delta to trade and to gather pine nuts and acorns. Tobacco, mescal (roasted agave), and mountain sheep
skins were obtained from the Paipai in exchange for delta foodstuffs. The Cocopah also obtained tobacco and eagle feathers from the Kumeyaay (Castetter and Bell 1951:54; Kelly 1977; Sample 1950:22). At times, the Cocopah traded seashells to the Kamia (Gifford 1931:37). They also visited frequently with their allies, the Maricopa, on the middle Gila River and with the Halchidhoma who lived in the Blythe area from about 1700 to 1830 (Gifford 1933; Kelly 1977).

The Quechan (*Kwatsan*) were formerly called the Yuma Indians. Their territory was centered at the confluence of the Gila and Colorado Rivers (present-day Yuma, Arizona), but extended north on the Colorado about 60 miles and 30 miles up the Gila. According to Quechan tradition, the northern boundary was in the vicinity of Blythe, California; the southern boundary reached into Baja California and Sonora, Mexico. Their neighbors on the northwest were the Cahuilla and Luiseño, and to the west the Kamia. Their eastern boundary was just west of Gila Bend, Arizona (Miguel n.d., cited in Bee 1982:37).

The Quechan had a relatively large population. The Quechan are not mentioned by Alarcon or Diaz at the time of first Spanish contact in 1540. The next visitor to the area, Juan Oñate, estimated a population of about 4,000 in 1604 (Bee 1983; Forbes 1965:343). He mentioned a stable horticultural and gathering economy. Throughout winter and spring, the Quechan lived in large seasonal settlements or rancherias located on terraces above the Colorado River floodplain. These winter settlements were moved from time to time, and establishing their precise locations is problematic (Bee 1982:40-44, 1983:87; Forde 1931:101). When the floodwaters of spring receded, the Quechan left their winter villages on the river terraces and dispersed into camps near their 2- to 3-acre horticultural plots distributed along the river floodplain. Extended families resided in these camps. Planting was done in the mud, as the river receded. Major crops included maize, squash, pumpkin, watermelon, and wheat (Castetter and Bell 1951). Wheat was introduced by Kino in 1700 (Castetter and Bell 1951:123). After the fall harvest season, the Quechan would reconvene in villages on terraces above the river to avoid seasonal flooding (Bee 1983:88; Forde 1931:101).

Quechan villages were actually a collection of houses, or rancherias, dispersed along the Colorado and Gila rivers. Households consisted of composite families that lived together and moved, more or less as a unit from place to place within a constantly changing floodplain environment. The annual flood of the Colorado constantly changed the gardening areas, eroding some, and burying others under tons of silt. This undoubtedly changed the desirability of potential village sites, campsites, and garden plots from time to time. The Quechan burned the houses and possessions of the dead (Bee 1982, 1983; Forde 1931; Trippel 1889:583), which also contributed to the movement of villages from time to time (Trippel 1889:583). Like other Lower Colorado Yuman peoples, the Quechan moved through their territory in a very dynamic cultural landscape (Bee 1982, 1983; Forde 1931).

5.2.6 Historic Period

The Spanish Period (1769–1821) in the Colorado Desert begins with the Alarcon exploration up the Colorado River in 1540 and the land expedition to the Colorado River by
Melchior Diaz in the same year. Cabrillo claimed the coast of Alta California for Spain in 1542. It was not until 1769 that a permanent settlement was founded. In that year, the San Diego Presidio and the San Diego Mission—in what is now Old Town—were established (Rolle 1998). Native American culture in the coastal strip of California rapidly deteriorated despite repeated attempts to revolt against the Spanish invaders (Carrico 1987; Cook 1976). One of the hallmarks of the Spanish colonial scheme was the rancho system, in which large land grants were made to meritorious or well-connected individuals to encourage settlement (Rolle 1998).

The first documented Spanish incursion into the Imperial Valley was that by Pedro Fages, who rode along the northwestern edge of the Colorado Desert while looking for deserters from San Diego in 1772. He entered the desert on an Indian trail that led through Oriflamme Canyon to Carrizo Creek and the desert floor (Bolton 1930:214; Lawton 1976:47; Pourade 1961:53-54). Fages was followed by Juan Bautista de Anza. Both the 1774 and 1775 Anza expeditions (guided by Padre Francisco Garcés) set out from Tubac, Sonora, to Yuma; south into Mexico; then west to Imperial Valley; and stopped at what he called Santa Rosa de las Lajas (Yuha Well). From there the expedition continued north through the Yuha Desert and went to what is now the community of Borrego Springs and north to San Gabriel (Forbes 1965). The route was abandoned in 1781 after the Quechan revolted against two Spanish settlements near Yuma (Forbes 1965). Both Fages and Anza expeditionary routes passed west of the project area.

During the Mexican Period (1822–1848), the mission system was secularized by the Mexican government and these lands allowed for the dramatic expansion of the rancho system. The southern California economy became increasingly based on cattle ranching. General Stephen Kearney, guided by Kit Carson, and his troops crossed the Colorado Desert east of the survey area in 1846 following the Native American trails. The famous Mormon Battalion, under the command of Philip St. George Cook, followed a similar route in 1847. The Mexican Period was brought to an end when Mexico signed the Treaty of Guadalupe Hidalgo on February 2, 1848, concluding the Mexican–American War (1846–1848; Rolle 1998). California became a state in 1850 (Rolle 1998).

A great influx of Americans and Europeans followed the discovery of gold in northern California in 1848. The gold seekers and homesteaders traveled through the Colorado Desert using the same route as Kearny and the Mormon Battalion, then known as the Southern Emigrant Trail in the early 1900s. In 1853 the route was used by the Birch Overland Mail and later in 1858 by the Butterfield Southern Overland Mail Line. After 1861, when the mail route stopped service, the route was used mostly for cattle drives from Mason and Vallecitos valleys to Carrizo Valley and the Fish Creek area in the desert (Cook and Fulmer 1980). In 1890, prospectors in search of minerals in the Anza–Borrego Desert began using the route (Cook and Fulmer 1980). Today this old Indian and pioneer route is called County Route S2, or the Great Southern Overland Stage Route of 1849, which connects Ocotillo at I-8 with Warner Springs to the north.

The segment of the Southern Pacific Railroad that runs northeast of the project area was constructed in the 1870s (Pourade 1964). Around the turn of the century, the Imperial
Valley experienced considerable population growth after the construction of irrigation projects, and agriculture became a prime focus of economic activity. The first canal built was the Imperial Canal. The Westside Main Canal is a 40-mile canal alignment built in 1907 that later became part of the All-American Canal system. The construction of the All-American Canal to transport water from the Colorado River to Imperial Valley between 1934 and 1940 transformed agricultural development and settlement of the Imperial and Coachella valleys. The areas served by the canal have become one of the richest and most important agricultural areas in the U.S. since the completion of the canal in 1938 (Queen 1999).

6.0 Field Methods

RECON archaeologist Richard Shultz conducted the on-foot survey of the project area on April 25, 2017. Because much of the project area consisted of graded and elevated dirt roads and developed water infrastructure, the survey was focused on open fields, built environment features, and possible buried deposits. The project area was inspected for evidence of archaeological materials such as flaked and ground stone tools or fragments, ceramics, milling features, and historic-period trash deposits, as well as historic-period buildings, structures, and objects. The project area was navigated on foot using a sub-meter capable Global Positioning System (GPS) unit. The field GPS unit consisted of a handheld Trimble GEO-XH with linked beacon receiver. Identified features were photographed and plotted on field sketch maps and recorded with the GPS unit.

Site information was recorded on Department of Parks and Recreation (DPR 523 series) Primary Record and Archaeological Site Record forms in accordance with the California Office of Historic Preservation (1995) Instructions for Recording Historical Resources. The Department of Parks and Recreation site forms and maps will be submitted to the SCIC.

The project area was photographed to document environmental setting, identifying surrounding landmarks and general conditions. Field notes, photographs, and documents associated with this study are on file at the RECON offices under job number 7972.

7.0 Study Findings and Conclusions

The survey resulted in the relocation of one previously recorded cultural resource (P-13-008655) and the identification one previously undocumented cultural resource (Dahlia Canal Lateral 1). No prehistoric or historical archaeological deposits were identified within the project area.

Area terrain is generally flat, and ground visibility was good throughout the project area (Appendix C: Figures 1 through 7). A significant portion of the project area consists of the Date Drain and the Dahlia Canal Lateral 1, which have been manually and mechanically maintained over the years resulting in the stockpiling of sediments that form the margins of the water conveyances, and the dirt road that functions as Imperial Avenue. Much of the project area is bounded by agricultural lands, which were free of crop cover. The central, eastern margin of the project area lies adjacent to an established residential development.
and a disused equestrian park. A westward arm, in the northwest corner of the project area, along Wake Avenue, is adjacent to, and is part of, another established residential development. At the time of survey, the southern margin of this portion of the project area was subject to an active grading operation.

All agricultural areas of the project area were clear of crops, with excellent surface visibility. Vegetation within the Date Drain was nominal, yet afforded excellent views of its construction and associated lateral inlet drains. Dahlia Canal Lateral 1 is concrete lined from the south side of McCabe Road, north to Valleyview Road, where is has been relocated and undergrounded by IID as part of the Buena Vista Park Subdivision. The lateral returns to its previous course and construction from north of Manuel Ortiz Avenue, north to Danenberg Drive, where it is turned eastward, and undergrounded again at Turnout 18A. The lateral is approximately 10 feet wide, though widths are greater at gates, underpasses, and turnouts. Within the project area the lateral is approximately 5,373 feet long, inclusive of the head gate south of McCabe Road, and the undergrounded section along the Buena Vista Park Subdivision. Lateral walls are sloped approximately 50 degrees outward from vertical. A variety of stamps on gate headworks indicate that concrete lining of the lateral took place in 1952, with ancillary gates dating between 1952 and 1989, with most features dating nearer to the earlier date.

It is the policy of Caltrans to avoid cultural resources whenever possible. An additional archaeological survey will be needed if project limits are extended beyond the present survey limits. If previously unidentified cultural materials are unearthed during the proposed enhancement project, it is Caltrans policy that work be halted in the area until a qualified archaeologist can assess the nature and significance of the find.
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