HISTORIC PROPERTY SURVEY REPORT

1. UNDERTAKING DESCRIPTION AND LOCATION

District	County	Route	Post Mile(s)	EA	E-FIS Project Number
12	ORA	133	8.5/M9.3	0N8900	1214000130

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 (36 CFR 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 PA), as well as under Public Resources Code 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 California Department of Transportation (Caltrans) proposes this project along the southbound stretch of State Route 133 (SR-133; Laguna Canyon Freeway) to add a lane from the southbound Interstate 5 (I-5) connector (Post Mile [PM] M9.3) to the northbound Interstate 405 (I-405) connector (PM 8.5). Project PM M9.3 is rounded up from the actual PM for project work (M9.23); as such, the bridge at Irvine Center Drive at PM M9.23 is not within the project limits. The proposed auxiliary lane will be the second lane on the northbound I-405 connector. The project also proposes extending the number three lane of southbound SR-133 approximately 300 feet (ft) south of San Diego Creek. Both the San Diego Creek Left Bridge (Bridge No. 55-0290L) and San Diego Creek Bridge (S133-N405 Bridge No. 55-0290F) will be widened as part of this project.

For a more detailed project description, please see the Archaeological Survey Report (ASR), which is Attachment C of this Historic Property Survey Report (HPSR).

2. AREA OF POTENTIAL EFFECTS

In accordance with Section 106 PA Stipulation VIII.A, the Area of Potential Effects (APE) for the project was established in consultation with Cheryl Sinopoli, Co-Principal Investigator (Prehistoric Archaeology), and Barbara McGahey, Project Manager, on December 3, 2019. The APE maps are located in Attachment A of this HPSR.

The APE was established as the area encompassing all places in which the project has the potential to directly or indirectly affect historic properties if any such properties exist. The APE includes areas where physical effects from the project would occur. This is generally limited to the existing and proposed right-of-way, including any temporary or permanent easements, as well as the horizontal and vertical limits associated with ground-disturbing activity.

The vertical APE is determined based on proposed construction and is estimated to extend from approximately 3 ft to about 25 ft. Maximum construction depths of construction for each activity are as follows:

- Asphalt/pavement: 3-4 ft
- Sign structures: up to 25 ft
- Pedestrian signal heads: 4.5 ft

- Midwest Guardrail System: 7 ft
- Tie-back walls: 3.5 ft
- Retaining walls: 5.5 ft
- Light poles: 5 ft
- Metering system: 6 ft
- Drainage inlets: 10 ft
- RSP/PGRSP: 6 ft

3. CONSULTING PARTIES / PUBLIC PARTICIPATION

☒ Native American Heritage Commission

Section 106 consultation was conducted concurrently with Assembly Bill 52 (AB 52) consultation. The Native American Heritage Commission (NAHC) was contacted on July 1, 2019, with a follow-up on July 18, 2019, to conduct a Sacred Lands File (SLF) search for the project APE and to request a California Environmental Quality Act (CEQA) Tribal Consultation List under AB 52. The NAHC responded on July 19, 2019, stating that the SLF was conducted with negative results for the presence of Native American cultural resources in the project APE. However, the NAHC recommended that 17 Native American individuals representing the Cahuilla, Gabrielino, Juaneño, Cupeño, and Luiseño groups be contacted for information regarding cultural resources that could be affected by the project. See "Native American Tribes, Groups, and Individuals" below for details.

☒ Native American Tribes, Groups, and Individuals

The following Native American tribes, groups, and individuals were contacted via project notification letters sent on August 1, 2019, and contacted again between August 23 and September 4, 2019, with follow-up phone calls and/or emails, as needed.

- Agua Caliente Band of Cahuilla Indians, Jeff Grubbe, Chairperson: The project is not within the Tribe's Traditional Use Area and they defer to other tribes in the area.
- Gabrieleno Band of Mission Indians – Kizh Nation, Andrew Salas, Chairperson: The Tribe has requested consultation with the Lead Agency but did not respond to follow-up communications from Caltrans.
- Gabrieleno/Tongva San Gabriel Band of Mission Indians, Anthony Morales, Chairperson: No response was received.
- Gabrielino/Tongva Nation, Sandonne Goad, Chairperson: No response was received.
- Gabrielino Tongva Indians of California Tribal Council, Robert Dorame, Chairperson: No response was received.
- Gabrielino-Tongva Tribe, Charles Alvarez: No response was received.
- Juaneño Band of Mission Indians, Sonia Johnston, Chairperson: No response was received.

- Juaneño Band of Mission Indians Acjachemen Nation, Matias Belardes, Chairperson: The only area the group has concerns about is the creek area, and they have requested to be kept updated.
- Juaneño Band of Mission Indians Acjachemen Nation – Romero, Teresa Romero, Chairperson: No response was received.
- La Jolla Band of Luiseño Indians, Fred Nelson, Chairperson: No response was received.
- Pala Band of Mission Indians, Robert Smith, Chairperson: The project is outside the boundaries of Pala's Traditional Use Area and they defer to closer Tribes. They stated that the project is near known archaeological sites and recommended that Native American monitoring be considered as a requirement for the project.
- Pauma Band of Luiseño Indians, Temet Aguilar, Chairperson: No response was received.
- Pechanga Band of Luiseño Indians, Mark Macarro, Chairperson: No response was received.
- Rincon Band of Luiseño Indians, Jim McPherson, Tribal Historic Preservation Officer: The project is not within Luiseño Aboriginal Territory and the tribe recommends locating a tribe within the project area.
- Rincon Band of Luiseño Indians, Bo Mazzetti, Chairperson: *See response for Jim McPherson, above.*
- San Luis Rey Band of Mission Indians, San Luis Rey Tribal Council: No response was received.
- Soboba Band of Luiseño Indians, Scott Cozart, Chairperson: No response was received.

For additional details of the Native American consultation, please see Attachment D of this HPSR.

☒ Local Historical Society

An email was sent to the Orange County Historical Society on September 11, 2019. No response was received.

Please see Attachment E of this HPSR for the record of the historical society outreach.

4. SUMMARY OF IDENTIFICATION EFFORTS

- ☒ National Register of Historic Places (NRHP)
- ☒ California Register of Historical Resources (CRHR)
- ☒ National Historic Landmark (NHL)
- ☒ California Historical Landmarks (CHL)
- ☒ California Points of Historical Interest
- ☒ California Historical Resources Information System (CHRIS)
- ☒ Caltrans Historic Bridge Inventory
- ☒ Results:

On July 24, 2019, a records search was conducted at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS), located at California State University, Fullerton. The records search included a review of all recorded historic and prehistoric archaeological sites within a 1.0-mile (mi) radius of the APE, as well as a review of known cultural resource survey and excavation reports within a 0.75 mi radius of the APE.

The records search identified 12 cultural resource studies covering the current APE and an additional 67 studies that were conducted within 0.75 mi of the current APE. Studies within the APE include survey (7), overview/inventory (3), annual report (1), and monitoring (1). Studies outside of the current APE include survey (35), monitoring (15), test (5), Environmental Impact Report/Study (EIR/EIS) (3), Inventory (3), Finding of Effect (2), research design (1), constraints analysis (1), historic evaluation (1), and data recovery (1) reports. These studies show that the entire APE has been completely surveyed several times.

Previous cultural resource work has resulted in recording 31 cultural resources within a 1.0 mi radius of the APE. No resources have been recorded within the APE. The nearest recorded resource to the APE is prehistoric site CA-ORA-391, which is an artifact scatter recorded nearly 300 ft north of I-405 at the southwest end of the APE. The recorded site area is now the location of a Tilly's commercial office building. Resource P-30-162270 is located just over 0.25 mi from the APE; however, this resource is the memorialized location of Barton Mound, which is thought to have been destroyed by construction of I-405.

Historic Old Town Irvine is not listed on the NRHP but is listed on the CRHR. It is Historical Landmark No. 1004 (Historic District P-30-161894). Old Town Irvine is situated along Sand Canyon Drive, just southwest of I-5. It encompasses six recorded buildings, two of which (the Irvine Blacksmith Shop and the Irvine Bean & Growers Assoc. Building) are listed in the NRHP.

Three of the 17 prehistoric resources within 1.0 mi of the APE were assessed for their significance and eligibility for listing in the NRHP. These sites are identified on the Office of Historic Preservation (OHP) Finding of Effect list. Sites CA-ORA-161 (artifact scatter), CA-ORA-1526 (shell scatter), and CA-ORA-1527 (artifact scatter) were all identified as having been determined ineligible for the NRHP by consensus through the Section 106 process, but were not evaluated for the CRHR or a local listing.

For more details of the records search results, please see the ASR, which is Attachment C of this HPSR.

5. PROPERTIES IDENTIFIED

☒ Bridges listed as **Category 5** (previously determined not eligible for listing in the NRHP) in the Caltrans Historic Bridge Inventory are present within the APE and those determinations remain valid. Appropriate pages from the Caltrans Historic Bridge Inventory are attached (Attachment B).

- 55-0290F (San Diego Creek S133-N405)
- 55-0290L (San Diego Creek)
- 55-0290R (San Diego Creek)
- 55-0653L (Alton Parkway OC)
- 55-0653R (Alton Parkway OC)
- 55-0654 (Barranca Parkway OC)

6. FINDING FOR THE UNDERTAKING

☒ Caltrans, pursuant to Section 106 PA Stipulation IX.A and as applicable PRC 5024 MOU Stipulation IX.A.2, has determined a Finding of **No Historic Properties Affected** is appropriate for this undertaking because there are no historic properties within the APE.

7. CEQA CONSIDERATIONS

☒ Caltrans PQS has determined there are **No Historical Resources** present, as outlined in CEQA Guidelines 15064.5(a).

8. LIST OF ATTACHED DOCUMENTATION

☒ Project Vicinity, Location, and APE Maps – Attachment A

☒ Caltrans Historic Bridge Inventory Sheet – Attachment B

☒ Archaeological Survey Report (ASR) – Attachment C

Strudwick, Ivan H. 2019. *Archaeological Survey Report for the State Route 133 Auxiliary Lane Project, Orange County, California. SR-133 P.M. 8.5-M9.3. EA No. 0N8900. EFIS ID No. 1214000130.*

☒ Native American Consultation Record – Attachment D

☒ Historic Outreach Records – Attachment E

9. HPSR PREPARATION AND CALTRANS APPROVAL

Prepared by: Kerrie N Collison January 2, 2020
Kerrie Collison, Archaeologist Date
LSA, Irvine, California

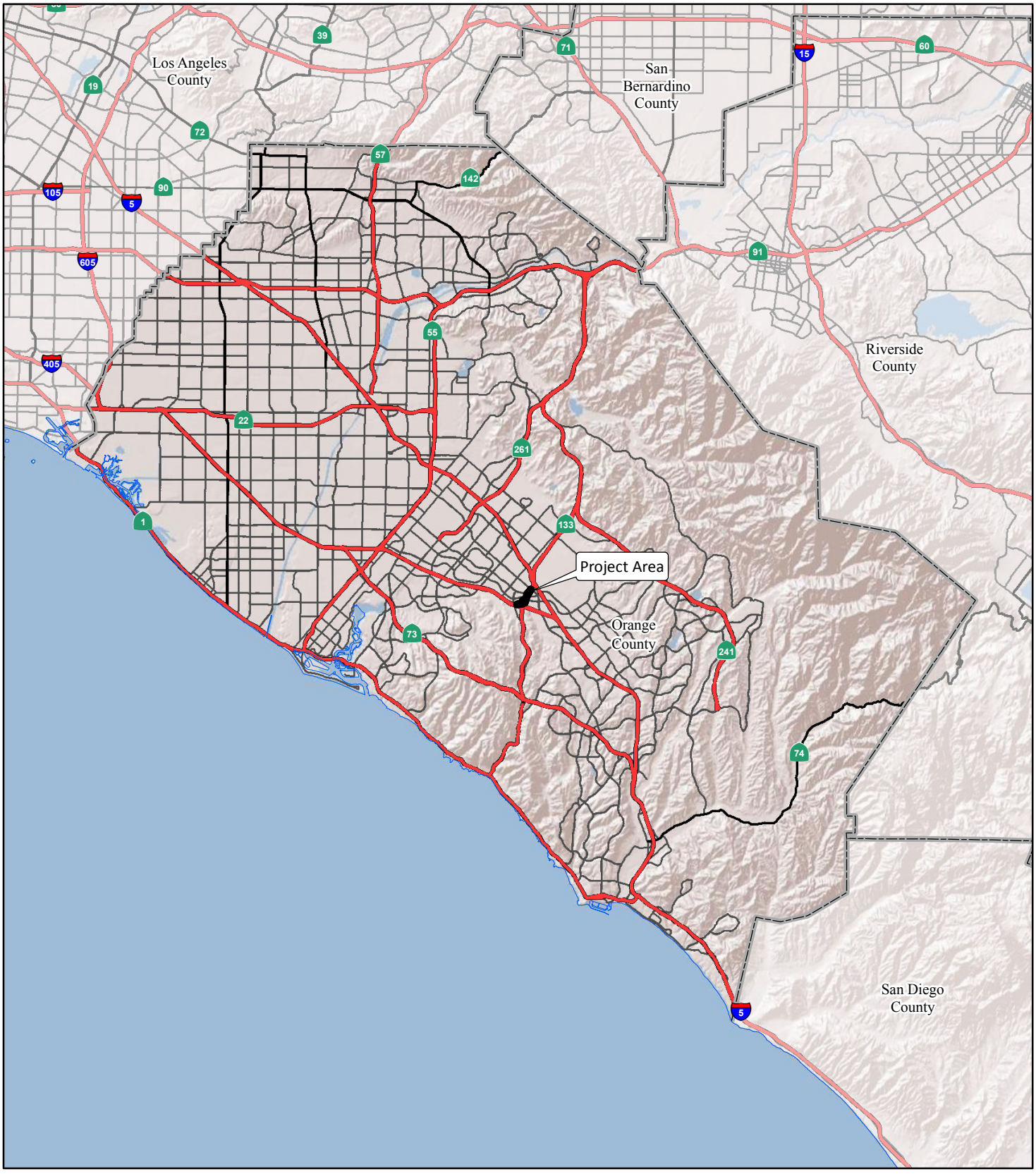
Reviewed for Approval by: Cheryl Kinaga 1/2/20
District 12 Caltrans Date
PQS Co-Principal Investigator (Prehistoric Archaeology)

Approved by: 1/2/20
Charles Baker, Environmental Branch Chief Date
District 12

ATTACHMENT A

PROJECT VICINITY, LOCATION, AND APE MAPS

CONFIDENTIAL – NOT FOR PUBLIC DISTRIBUTION



LEGEND

Project Location

MAP 1

N

0 3 6

MILES

SOURCE: Esri (2019); Caltrans (9/26/2019)

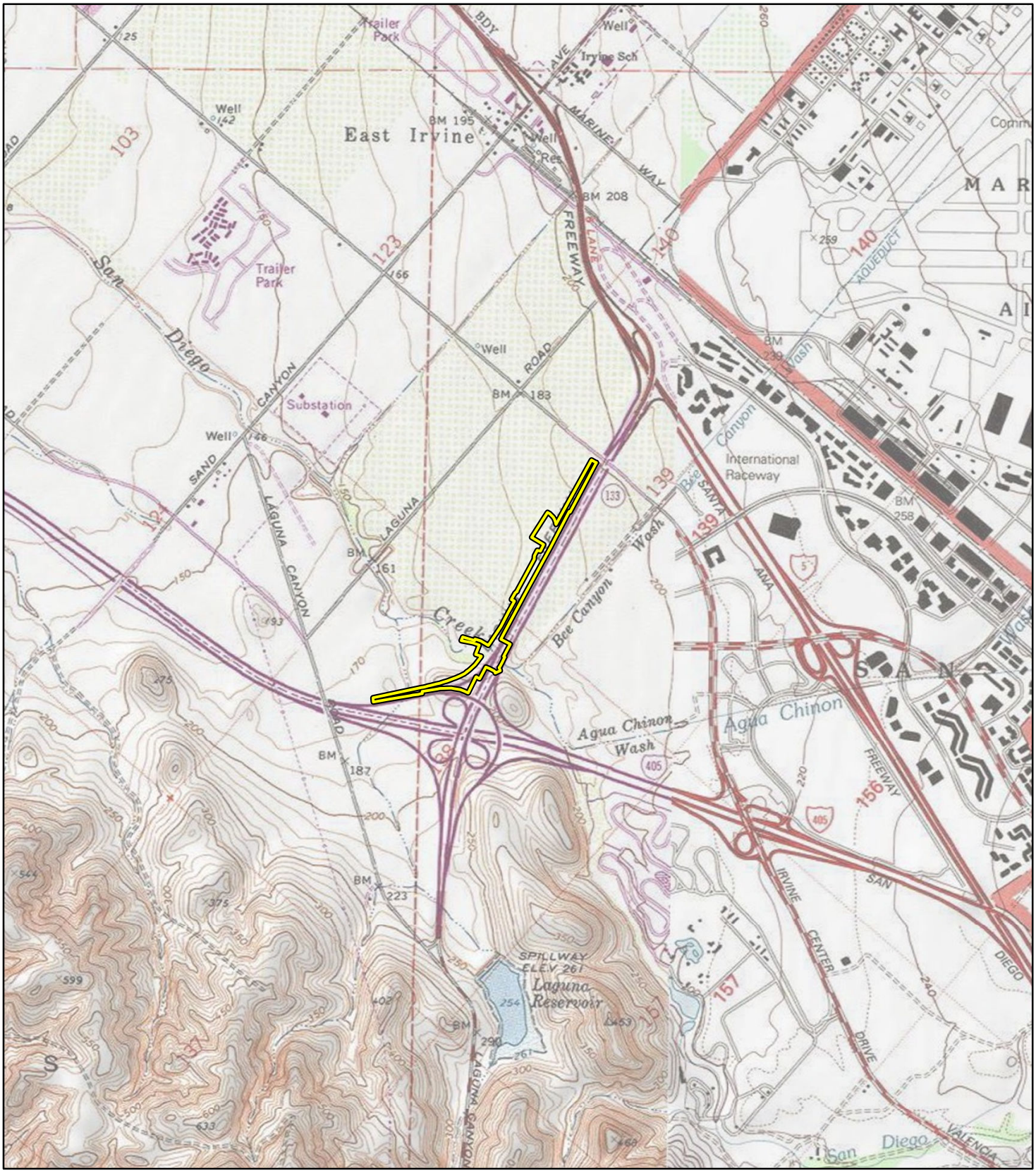
I:\CDT1901\GIS\MXD\Task01_SR133_Cultural\ProjectVicinity.mxd (12/23/2019)

SR-133 Auxiliary Lane Project

Project Vicinity

12-ORA-133 PM 8.3/M9.3

EA 0N8900



LEGEND

Project Location

MAP 2

N

0 1000 2000

FEET

SOURCE: Caltrans (9/26/2019); USGS 7.5' Quad - El Toro (1982) and Tustin (1981), CA

I:\CDT1901\GIS\MXD\Task01_SR133_Cultural\ProjectLocation.mxd (12/23/2019)

SR-133 Auxiliary Lane Project

Project Location

12-ORA-133 PM 8.3/M9.3

EA 0N8900

ATTACHMENT B

CALTRANS HISTORIC BRIDGE INVENTORY SHEET

Structure Maintenance & Investigations

Historical Significance - State Agency Bridges

District 12

Orange County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
55 0265	NEWLAND STREET OC	12-ORA-405-15.90-HNTB	5. Bridge not eligible for NRHP	1966	
55 0266	EDINGER AVENUE OC	12-ORA-405-16.28-HNTB	5. Bridge not eligible for NRHP	1966	
55 0267	ROUTE 405/39 SEPARATION	12-ORA-405-16.52-HNTB	5. Bridge not eligible for NRHP	1965	1989
55 0268	MCFADDEN AVENUE OC	12-ORA-405-16.98-HNTB	5. Bridge not eligible for NRHP	1965	
55 0269	BOLSA OVERHEAD	12-ORA-405-17.21-WTM	5. Bridge not eligible for NRHP	1965	1989
55 0270	BOLSA AVENUE OC	12-ORA-405-17.75-WTM	5. Bridge not eligible for NRHP	1965	
55 0271	GOLDEN WEST STREET OC	12-ORA-405-17.94-WTM	5. Bridge not eligible for NRHP	1965	
55 0272	NAVY OVERHEAD	12-ORA-405-18.36-WTM	5. Bridge not eligible for NRHP	1965	1989
55 0273	EDWARDS STREET OC	12-ORA-405-18.60-WTM	5. Bridge not eligible for NRHP	1965	1988
55 0274	WESTMINSTER AVENUE OC	12-ORA-405-19.16-WTM	5. Bridge not eligible for NRHP	1965	
55 0275	SPRINGDALE STREET OC	12-ORA-405-19.38-WTM	5. Bridge not eligible for NRHP	1965	
55 0276	BOLSA CHICA ROAD OC	12-ORA-405-20.56-WTM	5. Bridge not eligible for NRHP	1965	
55 0277	PRIMA DESCHECA CANADA	12-ORA-005-5.03-SCLE	5. Bridge not eligible for NRHP	1960	
55 0279	EUCLID STREET UC	12-ORA-091-2.23-ANA	5. Bridge not eligible for NRHP	1958	1995
55 0280	BROOKHURST STREET UC	12-ORA-091-1.23-ANA	5. Bridge not eligible for NRHP	1958	1995
55 0281	EAST GARDEN GROVE CHANNEL	12-ORA-039-5.13-HNTB	5. Bridge not eligible for NRHP	1961	
55 0282	WESTMINSTER STORM DRAIN	12-ORA-039-7.14-WTM	5. Bridge not eligible for NRHP	1954	1969
55 0283	CAMEO COVE UC	12-ORA-001-11.35-LGNB	5. Bridge not eligible for NRHP	1956	
55 0285	SAN DIEGO CREEK CHANNEL	12-ORA-405-6.41-IRVN	5. Bridge not eligible for NRHP	1968	1990
55 0287	GILBERT STREET UC	12-ORA-091-0.72-FUL	5. Bridge not eligible for NRHP	1958	1995
55 0288	SERRANO CREEK	12-ORA-005-20.97-IRVN	5. Bridge not eligible for NRHP	1958	1996
55 0289	TRABUCO CREEK	12-ORA-005-11.45-SJCP	5. Bridge not eligible for NRHP	1959	1997
55 0290F	SAN DIEGO CREEK (S133-N405)	12-ORA-133-8.59-IRVN	5. Bridge not eligible for NRHP	1968	
55 0290L	SAN DIEGO CREEK	12-ORA-133-8.59-IRVN	5. Bridge not eligible for NRHP	1968	1999
55 0290R	SAN DIEGO CREEK	12-ORA-133-8.59-IRVN	5. Bridge not eligible for NRHP	1958	1999
55 0292	EMERALD BAY ROAD UC	12-ORA-001-11.11-LGNB	5. Bridge not eligible for NRHP	1932	
55 0293L	W91/5 SEPARATION & OH	12-ORA-091-R3.56L-FUL	5. Bridge not eligible for NRHP	1970	
55 0296F	MAGNOLIA AVENUE UC (W91-N5 HOV)	12-ORA-091-R3.85L-FUL	5. Bridge not eligible for NRHP	1958	2000
55 0296L	MAGNOLIA AVENUE UC	12-ORA-091-R3.85L-FUL	5. Bridge not eligible for NRHP	1970	2000
55 0296R	MAGNOLIA AVENUE UC	12-ORA-091-R3.85R-FUL	5. Bridge not eligible for NRHP	1958	2000
55 0298	SAN JUAN CREEK ROAD UC	12-ORA-005-8.80-SJCP	5. Bridge not eligible for NRHP	1958	1996
55 0299	WESTERN AVENUE UC	12-ORA-091-R2.35-BPK	5. Bridge not eligible for NRHP	1969	1998
55 0300	KNOTT AVENUE UC	12-ORA-091-R1.85-BPK	5. Bridge not eligible for NRHP	1969	1998
55 0301	STANTON AVENUE UC	12-ORA-091-R2.85-BPK	5. Bridge not eligible for NRHP	1970	1998
55 0302	VALLEY VIEW STREET OC	12-ORA-091-R0.85-BPK	5. Bridge not eligible for NRHP	1969	
55 0303	ROUTE 91/39 SEPARATION	12-ORA-091-R2.61-BPK	5. Bridge not eligible for NRHP	1970	1998
55 0306	COYOTE CREEK	12-ORA-091-R0.10-LPMA	5. Bridge not eligible for NRHP	1969	1998
55 0308	WALKER STREET UC	12-ORA-091-R0.28-LPMA	5. Bridge not eligible for NRHP	1969	1998
55 0309	ORANGETHORPE AVENUE UC	12-ORA-091-R0.54-LPMA	5. Bridge not eligible for NRHP	1969	1998
55 0310	LOS ALAMITOS CHANNEL	12-ORA-022-0.15-SLB	5. Bridge not eligible for NRHP	1958	1959

Structure Maintenance & Investigations

Historical Significance - State Agency Bridges

District 12

Orange County

Bridge Number	Bridge Name	Location	Historical Significance	Year Built	Year Wid/Ext
55 0653L	ALTON PARKWAY OC	12-ORA-133-8.75-IRVN	5. Bridge not eligible for NRHP	1987	
55 0653R	ALTON PARKWAY OC	12-ORA-133-8.74-IRVN	5. Bridge not eligible for NRHP	1987	
55 0654	BARRANCA PARKWAY OC	12-ORA-133-9.00-IRVN	5. Bridge not eligible for NRHP	1990	
55 0655	EL MODENA IRVN CHANNEL	12-ORA-005-27.82-TUS	5. Bridge not eligible for NRHP	1992	2011
55 0656	JAMBOREE ROAD UC	12-ORA-005-27.59-IRVN	5. Bridge not eligible for NRHP	1991	
55 0657	TUSTIN RANCH OC	12-ORA-005-28.25-TUS	5. Bridge not eligible for NRHP	1992	
55 0658	TALBERT CHANNEL	12-ORA-001-21.82-HNTB	5. Bridge not eligible for NRHP	1991	
55 0659G	N133-N5/5 CONNECTOR SEPARATION	12-ORA-133-M9.48-IRVN	5. Bridge not eligible for NRHP	1991	
55 0660K	S5-4TH ST VIADUCT	12-ORA-005-31.10-TUS	5. Bridge not eligible for NRHP	1995	
55 0661S	N5-1ST ST OFF-RAMP OC	12-ORA-005-31.08-SA	5. Bridge not eligible for NRHP	1996	
55 0662	SANTA ISABEL AVENUE OC	12-ORA-055-R3.27-CMS	5. Bridge not eligible for NRHP	1990	
55 0663	PETERS CANYON	12-ORA-005-R27.25-IRVN	5. Bridge not eligible for NRHP	1992	
55 0665	BARRANCA PARKWAY OC	12-ORA-005-22.80-IRVN	5. Bridge not eligible for NRHP	1990	
55 0667	BARRANCA PARKWAY OC	12-ORA-005-22.81-IRVN	5. Bridge not eligible for NRHP	1991	
55 0669S	AIRPORT- N55 OC	12-ORA-405-7.84-IRVN	5. Bridge not eligible for NRHP	1990	
55 0670	BALL ROAD OC	12-ORA-005-37.64-ANA	5. Bridge not eligible for NRHP	1990	2001
55 0671L	GRAND AVENUE UC	12-ORA-005-31.65-SA	5. Bridge not eligible for NRHP	1995	
55 0671R	GRAND AVENUE UC	12-ORA-005-31.76-SA	5. Bridge not eligible for NRHP	1995	
55 0672	LINCOLN AVENUE UP	12-ORA-005-32.04-SA	5. Bridge not eligible for NRHP	1995	
55 0673L	17TH STREET UC	12-ORA-005-32.46-SA	5. Bridge not eligible for NRHP	1995	
55 0673R	17TH STREET UC	12-ORA-005-32.46-SA	5. Bridge not eligible for NRHP	1995	
55 0673S	17TH STREET UC	12-ORA-005-32.46-SA	5. Bridge not eligible for NRHP	1995	
55 0674	MAIN STREET OC	12-ORA-005-33.09-SA	5. Bridge not eligible for NRHP	1996	
55 0675	LINCOLN AVENUE OC	12-ORA-005-32.05-SA	5. Bridge not eligible for NRHP	1995	
55 0677	BRISTOL-LA VETA AVENUE OC	12-ORA-005-34.14-SA	5. Bridge not eligible for NRHP	1992	
55 0678	22/5 SEPARATION	12-ORA-022-R10.38-SA	5. Bridge not eligible for NRHP	1995	2007
55 0680F	S57-W22 CONNECTOR OC	12-ORA-057-10.82L-SA	5. Bridge not eligible for NRHP	1995	
55 0681H	S5&S57-E22/5 CONNECTOR SEPARATION	12-ORA-005-33.88-SA	5. Bridge not eligible for NRHP	1995	
55 0682F	S57-S5 CONNECTOR OC	12-ORA-057-10.78L-SA	5. Bridge not eligible for NRHP	1995	
55 0683F	S57-E22 CONNECTOR OC	12-ORA-057-10.80L-SA	5. Bridge not eligible for NRHP	1995	
55 0684K	S5-MAIN STREET OFF-RAMP	12-ORA-005-33.09-SA	5. Bridge not eligible for NRHP	1996	
55 0685Y	EDGEWOOD DRIVE HOV RAMP	12-ORA-005-33.10-SA	5. Bridge not eligible for NRHP	1996	
55 0686	SANTA CLARA-N5 ON-RAMP	12-ORA-005-33.00-SA	5. Bridge not eligible for NRHP	1996	
55 0687S	BROADWAY NB OFF-RAMP	12-ORA-005-33.29-SA	5. Bridge not eligible for NRHP	1996	
55 0688	ROUTE 5/261 SEPARATION	12-ORA-005-27.53-IRVN	5. Bridge not eligible for NRHP	1992	
55 0689E	55-5 HOV CONNECTOR VIADUCT	12-ORA-055-R10.06-SA	5. Bridge not eligible for NRHP	1994	
55 0691H	S5&S57-E22/N5-W22 SEPARATION	12-ORA-005-33.85-ORA	5. Bridge not eligible for NRHP	1994	
55 0692E	57-5 HOV CONNECTOR OC	12-ORA-057-10.79R-SA	5. Bridge not eligible for NRHP	1995	
55 0697	ANTONIO PARKWAY OC	12-ORA-241-17.60-RSM	5. Bridge not eligible for NRHP	1998	
55 0698	AVENIDA DE LAS BANDERAS OC	12-ORA-241-18.07-RSM	5. Bridge not eligible for NRHP	2003	
55 0699	SANTA MARGARITA PARKWAY OC	12-ORA-241-18.53-RSM	5. Bridge not eligible for NRHP	1995	
55 0700L	TRABUCO CREEK	12-ORA-241-18.70-RSM	5. Bridge not eligible for NRHP	1995	2005

ATTACHMENT C

ARCHAEOLOGICAL SURVEY REPORT (ASR)

ARCHAEOLOGICAL SURVEY REPORT FOR THE STATE ROUTE 133 AUXILIARY LANE PROJECT ORANGE COUNTY, CALIFORNIA

SR-133 P.M. 8.5-M9.3
EA NO. 0N8900
EFIS ID NO. 1214000130

Prepared by:

Ivan H. Strudwick, Associate/Archaeologist
Principal Investigator—Prehistoric Archaeology
LSA Associates, Inc.
20 Executive Park, Suite 200
Irvine, California 92614
(949) 553-0666

Reviewed by:

Cheryl Sinopoli
District 12 Archaeologist
California Department of Transportation, District 12
1750 East Fourth Street
Santa Ana, California 92705

Approved by:

Charles Baker
Environmental Planning Branch Chief
California Department of Transportation, District 12
1750 East Fourth Street
Santa Ana, California 92705

Key Information
USGS Quadrangle: Tustin, California 7.5' (1981)
Area Surveyed: 26.7 acres
Sites Recorded: None
Sites Updated: None
Key Words: Laguna Canyon Road, Gabrielino, Juaneño, SR-133

January 2020

SUMMARY OF FINDINGS

The California Department of Transportation (Caltrans) proposes the State Route 133 (SR-133) Auxiliary Lane Project (project) in Irvine, Orange County, California. This operational improvement project is on SR-133 from the southbound (SB) Interstate 5 (I-5)/SR-133 connector to the SB SR-133/ northbound (NB) Interstate 405 (I-405) connector. The proposed auxiliary lane will be the second lane on the NB I-405 connector. The project also proposes extending the number three lane of SB SR-133 approximately 300 feet (ft) south of San Diego Creek. Both the San Diego Creek Left Bridge (Bridge No. 55-0290L) and San Diego Creek Bridge (S133-N405 Bridge No. 55-0290F) will be widened as part of this project. This project is a non-capacity-increasing project for which there are two alternatives: the Build Alternative and the No Build Alternative.

The Area of Potential Effects (APE) for the project totals 15.8 acres. The APE includes areas where physical impacts from the project would occur. These are generally limited to the Build Alternative's proposed and existing right-of-way (ROW), potential temporary/permanent construction easements, and include the horizontal and vertical limits associated with ground-disturbing activities. The survey area included the APE plus extra area where the area was accessible. The vertical APE will extend to various depths from approximately 3 ft to about 25 ft, depending upon the proposed construction occurring. Maximum construction depths of construction for each activity are: asphalt/pavement: 3–4 ft; sign structures: up to 25 ft; pedestrian signal heads: 4.5 ft; Midwest Guardrail System: 7 ft; tie back walls: 3.5 ft; retaining walls: 5.5 ft; light poles: 5 ft; metering system: 6 ft; drainage inlets: 10 ft; Rock Slope Protection/Partially Grouted Rock Slope Protection (RSP/PGRSP): 6 ft.

On July 24, 2019, a record search was conducted at the South Central Coastal Information Center at California State University, Fullerton. The record search identified 12 cultural resource studies including the current APE and an additional 67 studies that were conducted within 0.75 mile of the APE. Nearly 60 percent of the previous studies within the APE were surveys, and the entire APE has been completely surveyed. More than half of the 67 previous studies with 0.75 mile of the APE were also surveys. The remaining studies include archaeological testing, data recovery excavation, monitoring, and other inventory-level reporting.

In total, 31 resources have been recorded within 1.0 mile of the APE, although none have been recorded within the APE. Previously recorded resources include prehistoric (17), historic (13), and combination prehistoric/historic (1). Prehistoric resources include sites (13) and isolated finds (4). Historic resources include Old Town Irvine (with 6 historical buildings), 2 railroads, 1 dam, 1 well, 1 former tourist destination (Lion Country Safari), and 1 location (Barton Mound). The large number of previously recorded resources in the area is related to the proximity of San Diego Creek and Old Town Irvine, and is also directly attributable to the large number of previous studies, especially surveys.

The Native American Heritage Commission (NAHC) was contacted, with further follow-up on July 18, 2019, to conduct a Sacred Lands File (SLF) search for the project APE and to request a California Environmental Quality Act (CEQA) Tribal Consultation List under Assembly Bill (AB) 52. On July 19, 2019, the NAHC responded, stating that the SLF did not identify the presence of Native American cultural resources in the APE. The NAHC recommended that 17 Native American individuals

representing the Cahuilla, Gabrielino, Juaneño, Cupeño, and Luiseño groups be contacted, which did take place. Two responses were received requesting additional information. Communication with interested parties continued until no additional communication was received. Specifics details of all Native American consultation are provided in this ASR.

On July 26, 2019, a survey of 26.7 acres, not including paved roadway, was conducted to identify cultural resources. Areas surveyed included open, unpaved/undeveloped areas of the APE and just outside of the APE where vegetation density allowed access. The area around the archaeological site closest to the APE (CA-ORA-391) was also surveyed to confirm that no surface evidence of the site remains. No archaeological resources were observed during the survey.

The APE is partially located on land within Caltrans ROW along the western SB side of SR-133 but also includes areas of temporary construction easements (TCEs). The survey showed that the area in the APE exhibited high levels of disturbance from previous road and drainage construction, from shoulder and slope maintenance, and from recent grading. As demonstrated by the results of the record search, the majority of prehistoric sites within 1.0 mile of the APE are located on knolls and other areas of higher elevation. Some of these knolls were graded and flattened as a result of construction, and the knolls (as well as the sites on them) no longer exist. This is true of site CA-ORA-391, the archaeological site closest to the APE. The APE is located at a lower elevation than the knolls, and although retaining wall excavation will extend approximately 3 feet deep into native soil, the likelihood of encountering intact archaeological resources in that native soil is low.

For the reasons discussed above, the likelihood of encountering intact archaeological resources in the APE during ground-disturbing construction activities is low.

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

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APPENDICES

LIST OF ABBREVIATIONS AND ACRONYMS

AB	Assembly Bill
APE	Area of Potential Effects
ASR	Archaeological Survey Report
BP	before present
ca.	Circa
California Register	California Register of Historical Resources
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CHRIS	California Historical Resources Information System
City	City of Laguna Beach
County	County of Orange
CSS	coastal sage scrub
EIR/EIS	Environmental Impact Report/Environmental Impact Statement
°F	Fahrenheit
FOE	Findings of Effect
ft	foot/feet
HPSR	*Historic Property Survey Report*
I-5	Interstate 5
I-405	Interstate 405
MGS	Midwest Guardrail System
NAHC	Native American Heritage Commission
National Register	National Register of Historic Places
NB	Northbound
OC	Overcrossing
OCIR	Orange County International Raceway
OHP	Office of Historic Preservation
PM	Post Mile(s)
PGRSP	Partially Grouted Rock Slope Protection
project	State Route 133 Auxiliary Lane Project

ROW	right-of-way
RSP	Rock Slope Protection
SB	Southbound
SCCIC	South Central Coastal Information Center
SLF	Sacred Lands File
SR-7	State Route 7
SR-133	State Route 133 (Laguna Canyon Road)
US-101	United States Highway 101
USGS	United States Geological Survey

INTRODUCTION

The proposed California Department of Transportation (Caltrans) State Route 133 (SR-133) Auxiliary Lane Project (project) is located on SR-133 from the southbound (SB) Interstate 5 (I-5)/SB SR-133 connector to the SB SR-133/northbound (NB) Interstate 405 (I-405) connector in the City of Irvine within south Orange County. The project proposes to construct a new auxiliary lane on SB SR-133 from the SB I-5 connector (Post Mile [PM] M9.3) to the NB I-405 connector (PM 8.5). The project vicinity and location maps are provided as Figures 1 and 2 in Appendix A of this document.

The record search for this project was conducted on July 24, 2019, at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) located at California State University, Fullerton, by Information Center staff researcher Isabela Kott. Record search information is provided as Appendix B.

On July 26, 2019, LSA Archaeologist Ivan Strudwick conducted a field survey of 26.7 acres of the Area of Potential Effects (APE), located along 1.0 mile of SR-133 from Irvine Center Drive south to the NB I-405 on-ramp in Irvine, Orange County (refer to the *Historic Property Survey Report* [HPSR], Attachment A, Maps 1, 2, and 3). The survey coverage area is identified on Figure 3 in Appendix A in this report. Since 1981, Mr. Strudwick has worked as an archaeologist in California and on the California Channel Islands. As an archaeologist at LSA since 1994, Mr. Strudwick is responsible for directing archaeological field excavations, surveys, laboratory analysis, monitoring, and report writing. Mr. Strudwick meets the Caltrans Cultural Resource Professional Qualification Standards for a Principal Investigator—Prehistoric Archaeology and as co-Principal Investigator—Historic Archaeology. Selected photographs of the field survey are provided as Appendix C.

HIGHWAY PROJECT LOCATION AND DESCRIPTION

PROJECT LOCATION

Generally, the APE is located along the west side of the Laguna Freeway (SR-133) in southern-central Orange County between I-5 and I-405. Specifically, the APE extends from the entrance ramp from SB SR-133 to NB I-405 (PM M9.3) to Irvine Center Drive (PM 8.5) along SB SR-133. The APE includes the SB lanes of SR-133 and also the highway shoulder and part of the open central highway divider between the SB and NB lanes. The APE is partially located on land within Caltrans right-of-way (ROW) along the western SB side of SR-133 but also includes areas of temporary construction easements (TCEs), although undeveloped open areas west of and adjacent to the APE were surveyed for this project.

PROJECT DESCRIPTION

This Caltrans' operational improvement project is located in the City of Irvine; in south Orange County. The project proposes to construct a new auxiliary lane on SB SR-133 from the SB I-5 connector (PM M9.3) to the NB I-405 connector (PM 8.5). This auxiliary lane will become the second lane on the NB I-405 connector. This project also proposes to extend the number three lane on SB SR-133 approximately 300 feet (ft) south of San Diego Creek to match the existing roadway pavement. This project is a non-capacity-increasing project with two alternatives: the Build Alternative and the No Build Alternative.

Project work activities for the Build Alternative include the following:

- Construct additional asphalt concrete pavement to provide a 12 ft wide auxiliary lane from the SB I-5/SB SR-133 connector to the SB SR-133/NB I-405 connector and a 12 ft wide lane from the gore area to a point 300 ft south of San Diego Creek.
- Construct additional asphalt concrete pavement to provide a second 12 ft wide lane on the SB SR-133/NB I-405 connector.
- Realign the Barranca Parkway loop on-ramp and reconstruct the ramp entrance. Convert the high occupancy vehicle lane to a general-purpose lane, install a connector ramp meter system, reconstruct the loop detectors, and modify the Midwest Guardrail System (MGS) along the on-ramp left shoulder if needed.
- Reconstruct maintenance vehicle pullouts.
- Construct tie back walls at the Barranca Parkway Overcrossing (OC) and the Alton Parkway OC.
- Construct an approximately 500 ft long retaining wall from the end of the San Diego Creek off-ramp bridge (55-0290F) towards the north.
- Construct an approximately 210 ft long retaining wall from the beginning of the San Diego Creek off-ramp bridge (55-0290F) towards the North.

- Construct an approximately 471 ft long retaining wall along the off-ramp from SB SR-133 to I-405. .
- Replace approximately 520 ft of the existing Reinforced Concrete Channel (RCC) with a Reinforced Concrete Box (RCB) between Barranca Parkway and Alton Parkway.
- Relocate and modify two existing overhead signs to accommodate pavement widening.
- Remove and replace light poles along the shoulder of SB SR-133 and the Barranca Parkway on-ramp.
- Install ramp metering at the SB SR-133/NB I-405 connector.
- Remove and replace signage as needed.
- Construct an approximately 500 ft long MGS segment between Wall #29 and the tie-back wall at the Alton Parkway OC.
- Remove the existing metal beam guard railing and end treatment at the gore area of the SB SR-133 and the SB SR-133/NB I-405 connector.
- Construct approximately 1,200 square ft of additional bridge pavement, construct bridge rail with 20:1 taper, and install REACT 350 to shield the end of bridge railings beyond the gore area of the SB SR-133 and the SB SR-133/NB I-405 connector.
- Relocate three drainage inlets along the right shoulder of SB SR-133 and two drainage inlets along the right shoulder of the SB SR-133/NB I-405 connector.
- Refresh all striping and markers.
- The San Diego Creek Left Bridge (55-0290L) will be widened to cover the gore area. A bridge Super-Structure will be constructed to accommodate the new lane configuration.
- The San Diego Creek off-ramp bridge (55-0290F) will be widened by 14.5 ft. A new Sub-Structure and Super-Structure will be constructed to accommodate the new lane configuration.
- Approach and departure slabs, paving notch, and joint seals will be added at the left bridge (55-0290L) and the off-ramp bridge (55-0290F).
- The existing Barriers, type 25 at the left bridge (55-0290L) and the off-ramp bridge (55-0290F) will be replaced with Concrete Barrier Type 836.
- Rock Slope Protection (RSP) will be placed 6 ft below the top of pile cap between the piers/abutment footings and flush with the footings and adjacent ground. The RSP used should be ½ ton (24 inches in diameter), installed in a pre-excavated 6-ft hole, and extend 5 ft from each side of the pier wall and extend 40 ft upstream from the face of the right bridge and 10 ft from the downstream face of the new widening of the off-ramp bridge (55-0290F).
- Slurry will be placed underneath the existing piers/abutments pile caps to fill the voids due to erosion prior to the excavation for RSP placement. The approximate area of the existing piers where slurry will be placed is 0.15 acres (6,450 square ft).

- Temporary construction easements (TCEs) are needed for reconstructing RCB, bridge widening, and RSP.
- Clearing and grubbing.
- Highway planting.
- Replace damaged landscape irrigation in kind where needed between the Irvine Boulevard OC to the Barranca Parkway on-ramp.

AREA OF POTENTIAL EFFECTS

The APE encompasses 15.8 acres and includes all areas in which the project has the potential to directly or indirectly affect historic properties if any such properties exist (refer to the HPSR, Attachment A, Map 3). The APE includes areas where physical effects from the Build Alternative would occur. These are generally limited to the proposed ROW for the Build Alternative and the existing ROW, including any temporary or permanent easements, as well as the horizontal and vertical limits associated with ground-disturbing activities.

The vertical APE is determined based on proposed construction and is estimated to extend from approximately 3 ft to about 25 ft. Maximum construction depths of construction for each activity are as follows: asphalt/pavement: 3–4 ft; sign structures: up to 25 ft; pedestrian signal heads: 4.5 ft; MGS: 7 ft; tie back walls: 3.5 ft; retaining walls: 5.5 ft; light poles: 5 ft; metering system: 6 ft; drainage inlets: 10 ft; RSP/PGRSP: 6 ft (Caltrans, personal communication, July 2019).

In general, areas of indirect effects extend beyond those of the direct effects and include areas that may be indirectly affected by visual, noise, and other effects. Areas of indirect effects generally include all properties directly adjacent to the proposed ROW unless they are undeveloped or unless potential indirect effects will be unlikely due to sufficient distance between the construction footprint and any development. The current survey included the unpaved portion of the APE, as well as extra area outside the APE when it was undeveloped and exhibited ground visibility (refer to Appendix A, Figure 3). The area surveyed totals 26.7 acres and included both undeveloped areas and areas covered with vegetation containing any ground visibility. Areas not surveyed included those areas covered with asphalt or concrete. It is estimated that the entire APE is disturbed from previous construction of SR-133 and I-405, bridges, and drainage culverts, both concrete and natural, along the roadway.

SOURCES CONSULTED

ARCHIVAL RESEARCH

SCCIC Record Search

On July 24, 2019, a record search was conducted at the SCCIC of the CHRIS, located at California State University, Fullerton (Appendix B). The record search included a review of all recorded historic and prehistoric archaeological sites within a 1.0-mile radius of the APE, as well as a review of known cultural resource survey and excavation reports within a 0.75-mile radius of the APE. In addition, the following inventories were examined:

- National Register of Historic Places (National Register)
- California Register of Historical Resources (California Register)
- California Historical Landmarks
- California Points of Historical Interest
- California Historic Resources Inventory

The record search identified 12 cultural resource studies including the current APE and an additional 67 studies that were conducted within 0.75 mile of the current APE (Table A). Studies within the APE included survey (7), overview/inventory (3), annual report (1), and monitoring (1). Studies outside of the current APE included survey (35), monitoring (15), test (5), Environmental Impact Report/Environmental Impact Statement (EIR/EIS) (3), Inventory (3), Finding of Effect (2), research design (1), constraints analysis (1), historic evaluation (1), and data recovery (1) reports. These studies show that the entire APE has been completely surveyed several times.

Table A: Results of Record Search

Previous Studies in the APE		
Reference	**OR No.[1]**	**Type of Study**
Gothold and Maguire (1973)	8	Survey
ARI (1976)	2534	Annual Report
Strozier (1978)	2225	Planning Review
Schroth (1979)	305	Overview
Weisbord (1981)	621	Survey
Padon (1983)	669	Survey
Padon (1984)	754	Survey
Cady (1985)	784	Survey
Padon (1985)	847	Survey
Padon (1991)	1098	Survey
Hunt (2000)	2267	Survey
Padon (2009)	3875	Monitoring
Previous Studies within 0.75-Mile of the APE		
OR-286, 304, 581, 585, 671, 741, 743, 771, 808, 814, 830, 868, 906, 972, 1099, 1196, 1402, 1439, 1577, 1619, 1620, 1621, 1668, 1692, 1844, 1902, 1903, 1937, 1944, 2027, 2108, 2337, 2484, 2635, 2649, 2671, 3196, 3205, 3236, 3237, 3238, 3239, 3263, 3266, 3277, 3285, 3289, 3293, 3347, 3357, 3358, 3366, 3373, 3392, 3700, 3728, 3764, 3825, 3933, 3961, 3989, 4029, 4084, 4223, 4320, 4478		

[1] OR is the Information Center code for Orange County, the county in which the study took place. References are listed alphabetically by name in the References section and by OR number in Appendix B.

APE = Area of Potential Effects ARI = Archaeological Research, Inc.

Previous cultural resource work has resulted in recording 31 cultural resources within a 1.0-mile radius of the APE. No resources have been recorded within the APE. The nearest recorded resource to the APE is prehistoric site CA-ORA-391, an artifact scatter recorded nearly 300 ft north of I-405 at the southwest end of the APE. The recorded site area is now the location of a Tilly's commercial office building. Resource P-30-162270 is located just over 0.25 mile from the APE; however, this resource is the memorialized location of Barton Mound, thought to have been destroyed during construction of I-405.

The 31 resources outside of the APE consist of prehistoric (17), historic (13), and combination prehistoric/historic (1) resources. Prehistoric resources include sites (13) and isolated finds (4). Historic resources include Old Town Irvine (with 6 recorded historic buildings), 2 railroads, 1 dam (Irvine Dam), 1 well, 1 former tourist destination (Lion Country Safari), and 1 location (Barton Mound).

Previously recorded prehistoric sites within 1.0 mile of the APE include artifact scatters (7), small habitation sites/camps (3), shall scatters (2) and lithic scatters (1). The four isolated finds include 1 flake, 1 retouched flake, 1 metate fragment, and 1 piece of *Chione* spp. (venus) shell. The majority of prehistoric sites within 1.0 mile of the APE are located on rises (knolls) of varying elevation. Some of these knolls have been graded and levelled from construction, and the knolls (as well as the sites on them) no longer exist.

Historic Old Town Irvine is not listed on the National Register. However, it is listed on the California Register as Historical Landmark No. 1004 (Historic District P-30-161894). Old Town Irvine is situated along Sand Canyon Avenue just southwest of I-5. It encompasses six recorded buildings, two of which (the Irvine Blacksmith Shop and the Irvine Bean & Growers Association Building) are listed on the National Register. The relatively large number of previously recorded resources in the area is related to the proximity of Old Town Irvine and San Diego Creek, and is also directly attributable to the large number of previous cultural resource studies, especially surveys, that have been conducted here.

Finding of Effects

Three of the 17 prehistoric resources within 1.0 mile of the APE were assessed for their significance and thus, for their eligibility for listing in the National Register. These sites are identified on the Office of Historic Preservation (OHP) Findings of Effect (FOE) list. Sites CA-ORA-161 (artifact scatter), CA-ORA-1526 (shell scatter), and CA-ORA-1527 (artifact scatter) were all identified as having been determined ineligible for the National Register by consensus through the Section 106 process, but were not evaluated for the California Register or a local listing.

Historic Maps and Aerial Photographs

Both Laguna Canyon Road and El Toro Road are depicted on the 1896 *Santa Ana, California* 15-minute USGS map (USGS 1896). At that time, while no buildings were identified along the entire length of Laguna Canyon Road, one building existed just outside the canyon, just west of where SR-133 was situated, and a second building existed on the north side of San Diego Creek, along a dirt road where Sand Canyon Avenue is located today, less than 0.5 mile from the current APE. The road

adjacent to the second building ran from the north end of Laguna Canyon Road northeast to the Atchison, Topeka, and Santa Fe Railroad where "Irvine" was identified (USGS 1896).

The two buildings mentioned above still existed on the 1901 *Santa Ana, California* 15-minute USGS map, which identifies the location (originally marked as Irvine) as "Myford," so this map reads "Myford Irvine." Four buildings are depicted at "Myford Irvine" along what is now Sand Canyon Avenue on the southwest side of the railroad tracks.

Online maps and aerial photographs were reviewed for this project. Little change was evident on maps from 1901 until 1935, probably because the same map edition was used from 1901 until the 1935 map was printed. The earliest available aerial photograph dates to 1938, and as aerial photographs are usually more accurate depictions of what existed at one point in time, the current discussion focuses on aerial photographs rather than on maps after 1938. Notable on the 1935 map was a farmstead located approximately 0.25 mile east of the APE just south of what is now Barranca Parkway. The 1935 map shows that Sand Canyon was named Central Avenue at that time and that a dirt road named Laguna Avenue ran parallel to Central Avenue 0.5 mile to the east.

The earliest available aerial photograph of this area dates to 1938. It depicts the area as agricultural, although the current APE was not being used agriculturally. This was still the case on 1946 and 1952 aerial photographs which, along with the 1938 aerial photo, all showed the farmstead as two distinct groups of buildings just east of the APE.

A 1963 aerial photograph shows that the Laguna Freeway had been constructed to connect Laguna Canyon Road north of Laguna Canyon with U.S. Highway 101 (US-101, now I-5) north of the current APE. The freeway was an undivided two-lane highway with a single bridge over San Diego Creek. The area around the Laguna Freeway was agricultural in 1963. The 1963 aerial appeared to show that one of the two groups of buildings just east of the APE no longer existed. A 1967 aerial photograph showed that there was still a single bridge over San Diego Creek and that a bridge along what is now Irvine Center Drive had been constructed over the freeway. East and west of the current APE, the land was still completely agricultural in 1967, and one building east of the APE still existed.

A 1972 aerial photograph shows that the Laguna Freeway was then a divided highway with two separate bridges over San Diego Creek. I-405 had been constructed, destroying all the mounds that once existed at the north end of the ridge descending northward along the eastern side of the entrance to Laguna Canyon. The building just east of the APE still existed in 1972, and land on both sides of the Laguna Freeway was still all agricultural. Little change was evident on a 1980 aerial photograph. However, by 1994, the character of the surrounding area was completely changed. Bridges had been constructed over SR-133 at Barranca and Alton Parkways and industrial/ commercial office buildings had been constructed. The building east of the APE had been demolished during the construction of Barranca Parkway. Although there were still undeveloped areas along the freeway, only one of them, situated along the west side at the northern end of the APE, was agricultural. A 2002 aerial photograph shows that no undeveloped areas existed along the west side of the Laguna Freeway from I-5 south to I-405. Between 2010 and 2014, undeveloped areas along the east side of the freeway disappeared as development of commercial office buildings continued.

NATIVE AMERICAN CONSULTATION

Section 106 consultation was conducted concurrently with Assembly Bill (AB) 52 consultation. On July 1, 2019, the Native American Heritage Commission (NAHC) was contacted, with a follow-up on July 18, 2019, to conduct a Sacred Lands File (SLF) search for the project APE and to request a California Environmental Quality Act (CEQA) Tribal Consultation List under AB 52. On July 19, 2019, the NAHC responded, stating that the SLF was conducted with negative results for the presence of Native American cultural resources in the project APE. The NAHC recommended that 17 Native American individuals representing the Cahuilla, Gabrielino, Juaneño, Cupeño, and Luiseño groups be contacted for information regarding cultural resources that could be affected by the project.

On August 1, 2019, the following Native American Tribes, groups, and individuals were contacted via project notification letter. These groups were contacted again between August 23, 2019, and September 4, 2019, with follow-up phone calls and/or emails, as needed.

- Agua Caliente Band of Cahuilla Indians: Jeff Grubbe, Chairperson
- Gabrieleno Band of Mission Indians – Kizh Nation: Andrew Salas, Chairperson
- Gabrieleno/Tongva San Gabriel Band of Mission Indians: Anthony Morales, Chairperson
- Gabrielino/Tongva Nation: Sandonne Goad, Chairperson
- Gabrielino Tongva Indians of California Tribal Council: Robert Dorame, Chairperson
- Gabrielino-Tongva Tribe: Charles Alvarez
- Juaneño Band of Mission Indians: Sonia Johnston, Chairperson
- Juaneño Band of Mission Indians Acjachemen Nation: Matias Belardes, Chairperson
- Juaneño Band of Mission Indians Acjachemen Nation – Romero: Teresa Romero, Chairperson
- La Jolla Band of Luiseño Indians: Fred Nelson, Chairperson
- Pala Band of Mission Indians: Robert Smith, Chairperson
- Pauma Band of Luiseño Indians: Temet Aguilar, Chairperson
- Pechanga Band of Luiseño Indians: Mark Macarro, Chairperson
- Rincon Band of Luiseño Indians: Jim McPherson, Tribal Historic Preservation Officer
- Rincon Band of Luiseño Indians: Bo Mazzetti, Chairperson
- San Luis Rey Band of Mission Indians: San Luis Rey Tribal Council
- Soboba Band of Luiseño Indians: Scott Cozart, Chairperson

Three responses were received as a result of the initial project notification letters. On August 12, 2019, an Administrative Specialist with the Gabrieleno Band of Mission Indians – Kizh Nation sent a letter via email stating that the project is within the Tribe's Ancestral Tribal Territory, and they requested to schedule a consultation with the lead agency. On the same day, Caltrans Project Archaeologist Cheryl Sinopoli responded via email and thanked the Tribe for the letter. Ms. Sinopoli also sent a project location map and asked the Tribe to let her know when they would like to discuss the project or meet in the field to view the project location. On August 13, 2019, the Administrative Specialist (with the Gabrieleno Band of Mission Indians – Kizh Nation) responded that the first available phone call appointment was September 18, 2019, at 11:00 a.m. That same day, Caltrans sent a reply stating that they understood how busy the Tribe was trying to consult on various projects, but stated that the deadline for the project was in mid-September. Caltrans requested for the Tribe to provide concerns at that time that could be researched and addressed, and also

provided an aerial photograph with the project limits. The Administrative Specialist (with the Gabrieleno Band of Mission Indians – Kizh Nation) replied on August 14, 2019, stating that the Tribe would notify Chairperson Salas and respond back to Caltrans.

On September 9, 2019, Caltrans followed up with Chairperson Salas via email with an attached project location map. Caltrans requested that the Chairperson respond if there was anything he wished to discuss regarding the project and its potential to impact cultural resources. Later that day, Caltrans sent a follow-up email to confirm receipt of a message the Chairperson Salas would be calling on the next day. On September 13, 2019, Caltrans Project Archaeologist Cheryl Sinopoli followed up via email on a voicemail left by Chairperson Salas and stated that she would be in the office until approximately 2:30 p.m. and invited the Chairperson to call when he had time. No further communication from the Tribe has been received.

On August 14, 2019, a letter response was sent via email by Deneen Pelton, Administrative Assistant for Cheryl Madrigal of the Rincon Band of Luiseño Indians. Ms. Pelton's letter states that the project is not within Luiseño Aboriginal Territory and the tribe recommends working with a tribe within the project area.

On August 26, 2019, an email response was received from Lacy Padilla of the Agua Caliente Band of Cahuilla Indians. Ms. Padilla's email states that the project is not located within the Tribe's Traditional Use Area and they defer to other Tribes in the area.

Two responses were received as a result of follow-up communications. On September 4, 2019, Shasta Gaughen of the Pala Band of Mission Indians responded via email on behalf of Chairperson Smith, stating that the project is outside the boundaries of Pala's Traditional Use Area and that they defer to closer Tribes. Ms. Gaughen also stated that the project is near known archaeological sites and recommended that Native American monitoring be considered as a requirement for the project. Caltrans replied to this message on September 5, 2019, to thank Ms. Gaughen for her message, stating that everything in her message would be taken into consideration. On October 3, 2019, Alexis Wallick, Assistant Tribal Historic Preservation Officer, sent a second email response on behalf of Ms. Gaughen. The email contained an attached letter that declined AB 52 consultation for the project and deferred to wishes of Tribes in closer proximity to the project area.

On September 5, 2019, Joyce Perry, Tribal Manager for the Juaneño Band of Mission Indians Acjachemen Nation, replied on behalf of Chairperson Belardes. Ms. Perry stated in an email that the only area her group would have concerns about would be the San Diego Creek area, and requested that she be kept updated. On September 9, 2019, Caltrans replied via email with a message that included an image depicting the project area and a project vicinity map, and described work within the San Diego Creek area. Caltrans then asked if Ms. Perry needed any additional information. No further communication has been received from Ms. Perry.

No additional responses were received as a result of the initial letter or follow-up communications. For additional details of the Native American consultation, please see the HPSR, Attachment D.

BACKGROUND SETTING

The natural setting of the APE is presented based on the underlying theoretical assumption that humans interact constantly with their physical environment. As part of the ecosystem, humans respond to the limits imposed by the environment through technological and behavioral adaptations. The location of archaeological sites is based on the constraints of these interactions, whether it is proximity to necessary resources, topographical restrictions, or based on a need for shelter and protection. Sites will be located and contain an assemblage of artifacts and ecofacts consistent with this interaction.

GEOLOGY AND GEOMORPHOLOGY

The APE is situated at an elevation of 170–200 ft in the area from the area near I-405 and San Diego Creek northward to I-5. Generally, elevation descends to the southwest, but at the south end of the APE, there are knolls that also rise to an elevation of over 200 ft. This area is located in the flood plain along the middle of the north edge of the San Joaquin Hills at the mouth of Laguna Canyon. The broad alluvial flood plain is known here as the Tustin Plain. The south end of the APE is situated at the convergence of San Diego Creek, Bee Canyon Wash, and Agua Chinon.

Laguna Canyon, originally *Cañada de las Lagunas* (the Canyon of the Lagoons, or Lakes) was named as early as 1841, and the name of the beach town derives from this early canyon name (Gudde 1998:200). Laguna Canyon is the longest canyon in the San Joaquin Hills (Meadows 1966:76). Water exists in Laguna Canyon to the south, as well as in San Diego Creek, the main drainage into Upper Newport Bay and which crosses the APE. The nearby tributaries of San Diego Creek (Bee Canyon Wash and Agua Chinon) also contain water both now and prehistorically.

Approximately 2.5 miles south of the APE lie three natural lakes thought to be Orange County's only natural lakes (Hamilton and Willick 1996:10) and possibly the only natural lakes in the greater Orange and Los Angeles County area (Needham 1924:1). These lakes are the Spanish-named *lagunas* from which the word *Laguna* originates (Salley 1977:113). Although they usually contain water, at least two of the lakes can dry up completely during the dry season.

The term *Southern California* refers to the southwestern portion of the State where rapid urbanizing is covering coastal lowlands. The word *cismontane* refers to "this side of the mountain," and the cismontane area of Southern California describes the coastal side of the Transverse and Peninsular Ranges, specifically the alluvial outwash that includes most of Los Angeles and Orange Counties (Schoenherr 1992:313).

The Peninsular Ranges are one of the largest geologic units in western North America. They extend over 900 miles from the Transverse Ranges and the Los Angeles Basin to the tip of Baja California and are 30–100 miles wide (Norris and Webb 1976:169). The Peninsular Ranges exhibit a gentle westerly slope and normally, a steep eastern face. They are predominately a series of northwest-southeast oriented blocks that within California include, from east to west, the Santa Rosa, San Jacinto, Laguna, Agua Tibia, and Santa Ana Mountains. The highest elevations are in the San Jacinto-Santa Rosa Mountains. San Jacinto Peak is 10,805 ft, and summits in the Santa Rosa Mountains

average 6,000 ft. In the Santa Ana Mountains, the two highest peaks in Orange County, Santiago Peak (5,687 ft) on the south and Modjeska Peak (5,496 ft) on the north, are the two highest peaks in Orange County and resemble a saddle when viewed from the Orange County area (Meadows 1966:101, 126; Gudde 1998:242, 325, 350; Brigandi 2006:59, 81, 87). For this reason, the formation is called "Saddleback," "Old Saddleback," or "Saddleback Mountain."

Geologically, most of Orange County is a floodplain composed of recent Holocene colluvium and alluvium less than 10,000 years old (Morton and Miller 1981; Morton and Miller 2006). The APE is identified as primarily young unconsolidated alluvial fan deposits of Holocene and late Pleistocene age that consist predominately of gravel, sand, and silt. Main drainage areas contain more coarse-grained sediment than distal areas.

At the south end of the APE, the knolls descending northward from the San Joaquin Hills are identified as early Miocene, Oligocene, and late Eocene Vaqueros Formation that, in the San Joaquin Hills, consists of brownish-gray, massive- to thick-bedded sandstone and sandy siltstone, having interbeds of siltstone and shale, mudstone, and minor conglomerate (Morton and Miller 2006). The Vaqueros Formation is known to contain early Miocene-age shallow-water marine megafossils.

BIOLOGY

Southern California's most common vegetative communities are scrub vegetation, known as coastal sage scrub (CSS), and chaparral, which denote habitat characterized by dense stands of brush. Scrub vegetation occurs throughout the world in regions containing a Mediterranean climate (Schoenherr 1992:313). The CSS biotic community occurs in cismontane areas between the sea and the higher elevation chaparral-covered mountainous slopes (Jaeger and Smith 1966: 43–44; Beck and Haase 1974:8). Plants in the CSS biotic community include California sagebrush (*Artemisia californica*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), lemonade berry (*Rhus integrifolia*), California encelia (*Encelia californica*), coyote bush (*Baccharis pilularis*), laurel sumac (*Malosma laurina*), California buckwheat (*Eriogonum fasciculatum*), and prickly pear (*Opuntia* spp.). Birds in this community include Anna's hummingbird (*Calypte anna*), cactus wren (*Campylorhynchus brunneicapillum*), California quail (*Callipepla californica*), wrentit (*Chamaea fasciata*), California towhee (*Pipilo crissalis*), sage sparrow (*Amphispiza belli*), and rufous-crowned sparrow (*Aimophila ruficeps*). Mammals in this community include California ground squirrel (*Spermophilus beecheyi*), desert woodrat (*Neotoma lepida*), southern mule deer (*Odocoileus hemionus fuligmatus*), California mouse (*Peromyscus californicus*), and Audubon's cottontail (*Sylvilagus audubonii*). Reptiles in this community include western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis melanoleucus*), and western rattlesnake (*Crotalus viridis*; Jaeger and Smith 1966: 43–44).

CLIMATE

Southern California's climate is the product of cold ocean water and warm air, a combination of maritime and Mediterranean climates. The maritime influence causes a persistent marine layer resulting in haze or fog, and even smog when a multitude of motorized vehicles runs under these climatic conditions. The Mediterranean climate is characterized by long, hot summers and relatively mild winters with moderate precipitation, including snow at upper elevations (Jaeger and Smith 1966:18–19; Schoenherr 1992:313). During summer, Southern California often exhibits high

atmospheric pressure that prevents cloud formation and precipitation except for the occasional tropical storm from the south (Schoenherr 1992:316). Winter storms generally come from the northwest.

Annually, coastal Orange County averages 12 inches of rain (Beck and Haase 1974:5). Winter rain is followed by spring fogs giving way to summer haze and smog. The average minimum January temperature for the coastal Orange County region is 44 degrees Fahrenheit (˚F), while the average high temperature in July is 76˚F (Beck and Haase 1974:6–7). Summer temperatures are often in the 90s, and higher. Fall brings Santa Ana winds that blow from the California deserts to the coast. These winds increase in temperature from compression as they blow from higher desert elevations toward lower coastal elevations. During summer and fall months, coincident with Santa Ana winds, vegetative communities such as chaparral and CSS become extremely dry and susceptible to fire. Over millennia, the chaparral and CSS have evolved in conjunction with fire and require periodic burning for proper growth (Schoenherr 1992:328-329).

Today, the biotic character of this area has changed greatly over the past 200 years. In the past, the area was predominately CSS with riparian areas along drainages. Although Laguna Canyon to the south retains much of its native condition and is less disturbed than most areas of Orange County, the APE is now urbanized and does not display the characteristic CSS that once covered the plain. Vegetation and landform within the APE is composed primarily of introduced ornamental plants and annual nonnative grasses. Because much of the local area no longer contains natural landform, it is unlikely that archaeological resources exist in the area.

CULTURAL SETTING

Prehistory

The development of a regional chronology marking the major stages of cultural evolution in the Southern California area has been an important topic of archaeological research. In general, cultural developments in Southern California have occurred gradually and have shown long-term stability. For this reason, developing and applying chronologies to specific areas is difficult.

Southern California researchers have used changing artifact assemblages and evolving ecological adaptations to divide regional prehistory into stages. Wallace (1955, 1978) and Warren (1968) have developed the two most commonly referenced chronologies. Wallace (1955) uses major cultural developments to divide area prehistory into four cultural horizons, or time periods: Early Period, Milling Stone Period, Intermediate Period, and Late Period. The following overview is based primarily on Wallace's chronology (see also Koerper 1981; Koerper and Drover 1983).

None of the chronologies cited begin prior to the end of the Pleistocene, circa (ca.) 12,000 before present (BP). Although some sites in North and South America accepted as dating pre-10,000 BP, none are locally documented.

The Early Period (Pre-6000 BC)

The Early Period (also known as the Hunting Period) covers the interval from the first presence of humans in Southern California until post-glacial times (ca. 5500 to 6000 BC). Artifacts and cultural

activities from this period represent a predominantly hunting culture. Artifacts from this period include large, often fluted bifaces associated with use of the spear and the atlatl, or spear thrower. In Southern California, important Early Period sites have been found near prehistoric Lake Mohave and along the San Dieguito River (Wallace 1955, 1978:27; Moratto 1984:81, 93–99).

The Milling Stone Period (6000–3000 BC)

The transition from the Early Period to the Milling Stone Period is marked by an increased emphasis on the processing of seeds and edible plants and is estimated to have occurred between 6000 and 3000 BC. According to Wallace (1978:28), wild seeds and edible plants formed the primary food source during this period, with only limited use of shellfish and faunal resources. Plant resources were processed using deep-basined metates and hand stones, hence the term Milling Stone Period. Milling Stone Period sites were larger and were occupied for longer periods of time than Early Period sites. Mortuary practices during the Milling Stone Period included both flexed and extended burials as well as reburials. Grave offerings were few, although rock cairns were sometimes placed over the bodies (Wallace 1955:192, Table 1; 1978:28).

Artifacts recovered from Milling Stone Period archaeological sites include metates, manos, and large projectile points substantiating the continued use of spears, darts, and atlatls. Among the artifacts from this period are discoidals and cogged stones. Discoidals are round-to-ovoid ground stones with flat or slightly convex faces and edges, while cogged stones are similar to discoidals, but contain serrated edges resembling the teeth on a gear. Both types of artifacts occur within the Milling Stone Period, ca. 4000 BC. The use of discoidals and cogged stones remains enigmatic, although they may have had a ceremonial function (Moratto 1984:149–150).

The Intermediate Period (3000 BC–AD 500)

By approximately 3000 BC, the inhabitants of Southern California began exploiting a more diverse array of food resources, including seeds and edible plants, shellfish, fish, and mammals. Along the coast, a greater reliance was placed on marine food resources as evidenced by the recovery of near-shore and pelagic (deep-water) fish remains from archaeological sites. In the interior regions such as the Mojave Desert, the return of cooler, moister conditions led to increased populations along streams and lakes. Hunting appears to have been the primary food-gathering activity in these interior areas. The best-known Intermediate Period desert sites are located at Pinto Basin in northeastern Riverside County (Wallace 1978:30–31; Moratto 1984:153).

Intermediate Period sites are characterized by the appearance of the mortar and pestle. Although the mano and metate continued to be used during this period, the use of the mortar and pestle appears to indicate an increased reliance on seeds as a food source. The presence of large, heavy projectile points during this period suggests the continued use of spears and darts in conjunction with the atlatl (Elsasser 1978:55; Wallace 1978:32). The circular shell fishhook also makes its appearance at coastal sites during this period. The circular fishhook is found most abundantly in areas adjacent to a rocky coastline south of Point Conception and was less subject to fouling than gorges and other types of hooks (Strudwick 1986:283–284). The discoidal and cogged stone are found prehistorically from 4000–1000 BC (Moratto 1984:149), and are both found at Milling Stone and Intermediate Periods.

Intermediate Period burials were generally flexed and face down, although a site at Big Tujunga Wash in the San Fernando Valley contained both reburials under stone cairns and cremations (Wallace 1955:193–195; Elsasser 1978:55). Researchers have had difficulty distinguishing Intermediate Period sites because many of the tool types from Intermediate Period sites appear in earlier and later periods. Intermediate Period sites have often been identified using radiocarbon or obsidian hydration dating methods.

The Late Prehistoric Period (AD 500–1769)

The Late Prehistoric Period began ca. AD 500. During this time period, changing technology as shown by changing tool types reflects changing cultural patterns, including subsistence strategies and ceremonial practices. The change in cultural traits is thought to have been caused by the migration of people from the Great Basin region to the Pacific Coast. This movement of people and their culture has come to be known as the Uto-Aztecan (Takic) migration, and is named after language family of the groups moving toward the coast.

In the Late Prehistoric Period, the presence of smaller projectile points indicates use of the bow and arrow for hunting. Circular fishhooks are more common, also generally smaller, less circular, and made of bone as well as shell. Steatite effigies become more common during the Late Period, and burial practices also include cremation. Elaborate mortuary customs and abundant grave goods are common during this period and include placement of personal ornaments of bone, shell, and stone with the interments (Wallace 1955:195; Bean and Smith 1978; Elsasser 1978:56; Moratto 1984:159).

By AD 1000, ceramic smoking pipes and pottery begin to appear; however, ceramic vessels are exceedingly rare at Gabrielino sites. When ceramics are recovered, they offer a relative method for dating sites. Site dating also depends on other factors such as the increased frequency of Salton Sea (Obsidian Buttes) obsidian used sporadically in the Orange County area until after ca. AD 1000. Obsidian Buttes obsidian is thought to have been made available prehistorically by the receding shore of Lake Cahuilla, its last two stands occurring approximately AD 900–1500 (Wilke 1978:57). Late Period sites within the Orange County region are also denoted by the presence of Grimes Canyon fused shale, which originated in Ventura County (Demcak 1981; Hall 1988).

A number of the cultural elements found in Southern California during the Late Period have been linked to the migration of Uto-Aztecan speaking peoples from the Great Basin. These traits include the manufacture of ceramics, the use of small triangular arrow points, and interment by cremation. The date of the Uto-Aztecan migration, which may have occurred in successive waves over an extended period of time, remains inexact, and has been dated as early as 2000 BC and as late as AD 700. Linguistic evidence suggests a date of AD 1 to 500 (Kroeber 1925:574–580; Moratto 1984:161).

Ethnographic Setting

Gabrielino

The Late Prehistoric Period ended abruptly when Franciscan friars and Spanish soldiers began establishing mission outposts along the California coast. At that time, the San Joaquin Hills were occupied by the Gabrielino Indians. Gabrielino refers to the Uto-Aztecan (Takic) speaking Native

Americans who lived throughout the present Los Angeles and northern Orange County areas and who were historically affiliated with Mission San Gabriel Archangel, founded on September 8, 1771 (Lowman 1993:2). Today, some of the Gabrielino prefer to call themselves *Tong–va* (McCawley 1996). Gabrielino territory included the watersheds of the Los Angeles, San Gabriel, and Santa Ana Rivers, several smaller intermittent streams in the Santa Monica and Santa Ana Mountains, all of the Los Angeles Basin, the coast from Aliso Creek north to a point between Topanga and Malibu Creeks, and the islands of San Clemente, San Nicolas, and Santa Catalina (Kroeber 1925:620–621; Johnston 1962; Bean and Smith 1978:538; McCawley 1996:3). The APE is located within the southernmost portion of Gabrielino territory, just north of Juaneño territory.

The first recorded contact between the Gabrielino and Europeans occurred in 1542, when the Cabrillo Expedition arrived at Santa Catalina Island (Wagner 1941:17; Paez 1968:8-10; Gudde 1998:342). In the Orange County area, the first recorded contact occurred in 1769 when the Gaspar de Portolá expedition crossed the region. What is known about the Gabrielino was recorded principally during the initial European expeditions through the Southern California area. Due to the rapid reduction in indigenous population, later expeditions did not have access to information about native people available to these first explorers.

The Gabrielino were hunters and gatherers who used both inland and coastal food resources. They caught and collected seasonally available food resources, and led a semi-sedentary lifestyle, living in permanent communities along inland watercourses and coastal estuaries. Individuals from these villages took advantage of the varied resources available at such locales. As food became available seasonally, the Gabrielino moved to temporary camps to collect plant foods such as acorns, buckwheat, chía, berries, and fruit, and to conduct communal rabbit and deer hunts. Acorns were the staple food of most indigenous Californians (Kroeber 1925:84) and were the most characteristic feature of the domestic economy of native California (Gifford 1936:87). They also established seasonal camps along the coast and near bays and estuaries to gather shellfish and hunt waterfowl (Hudson 1971).

The coastal Gabrielino had a marine-oriented economy similar to the coastal Chumash. Their subsistence strategy combined shellfish collecting, ocean fishing, and sea mammal hunting, as well as land mammal hunting and plant collecting. They processed acorn meal and utilized plant resources near their coastal villages (Gifford 1936; Hudson 1971).

The Gabrielino inhabited small communities that were the focus of family life. Patrilineally linked extended families occupied each village (Kroeber 1925; Johnston 1962; Bean and Smith 1978; McCawley 1996). Both clans and villages were apparently exogamous, marrying individuals from outside the clan or village (Reid 1852). Gabrielino villages were politically independent and were administered by a chief, or *Tomyaar*, who inherited his position from his father. Shamans guided religious and medical activities, while group hunting or fishing was supervised by individual male specialists (Bean and Smith 1978).

According to Alfred L. Kroeber, a distinguished authority on the Indians of California, the Gabrielinos held “the great bulk of the most fertile lowland portion of Southern California” (1925:621). As such, they enjoyed a more abundant food supply and easier living conditions than their neighbors, and

they attained a higher cultural level than any other Indian group south of the Tehachapi range. In addition, they communicated elements of their culture to other native groups (Kroeber 1925:621).

Juaneño

The Juaneño were historically affiliated with Mission San Juan Capistrano, which was founded on November 1, 1776 (Lowman 1993:2). The Juaneño occupied a much smaller territory located between Gabrielino territory on the north and the Luiseño territory to the south. Juaneño language, however, was a dialect of the Luiseño language (Kroeber 1925:636). Juaneño territory extended from the ocean to the southern crest of the Santa Ana Mountains. Southward, Juaneño territory ran between San Onofre and Las Pulgas Creeks, and on the north, its boundary was Los Alisos Creek (Kroeber 1925:636). This places the current APE north of Juaneño territory. Geographically, the northern end of South Laguna Beach is marked by Aliso Creek. Thus, the boundary between Laguna Beach and South Laguna Beach is also the generally accepted boundary between the Gabrielino and the Juaneño. Much of what is known about the Juaneño comes from studies of the Gabrielino and Luiseño.

Rather than having a distinct language, Juaneño speech was said to be a dialect of Luiseño (Kroeber 1925:636). White (1963:104) states that the dialectical differences between the Juaneño and Luiseño "did not prevent mutual understanding" and continues that, although local variations in culture between Juaneño and Luiseño may have existed, it was at a village level rather than a tribe level, suggesting only minor differences between the two groups. Sparkman (1908) and White (1963) argue that the Juaneño were really a subgroup of the greater Luiseño tribe. O'Neil (1988:107, 111) also makes reference to the Juaneño being a coastal branch of the Luiseño. Merriam (1968) extends Juaneño territory northward to the Santa Ana River and Newport Bay, although this is quite a distance north when compared with previous territory descriptions and is not generally accepted. These previous descriptions suggest major similarities between the Luiseño and Juaneño, based primarily on language. In any event, major similarities existed between the Luiseño and the Juaneño groups, much greater than the similarities between the Juaneño and the Gabrielino.

Juaneño culture was similar to Gabrielino culture in that it was characterized by an elaborate system of ritual and ceremony. The Gabrielino jimson weed ceremonies were practiced by the Juaneño, who in turn helped convey them to the Luiseño. As with the Luiseño, these rites were inspired by their god, *Chinigchinich,* and were recorded by Franciscan Friar Gerónimo Boscana during his residence at Missions San Juan Capistrano and San Luis Rey (Boscana 1933; Hanna 1933; Harrington 1933, 1934; Bright 1978:iii). Upon reaching puberty, children were given a drug, possibly a mixture of jimson weed and tobacco, during a communal ritual. The drug-created visions were usually of an animal, in which the children were instructed to place all confidence because the animal vision would defend them from future danger. Animals mentioned by the Luiseño as guardian spirits included coyote, bear, crow, raven, and rattlesnake (Kroeber 1925:640).

The Juaneño were hunters and gatherers who used both inland and coastal food resources. They hunted and collected seasonally available food resources and led a semi-sedentary lifestyle, often living in permanent communities along inland watercourses and coastal estuaries. Commonly chosen habitation sites included rivers, streams, and inland watercourses, sheltered coastal bays and estuaries, and the transition zone marking the interface between prairies and foothills

(Oxendine 1983). The most important factors in choosing a habitation site were the presence of water, a stable food supply, and some measure of protection from flooding. Communities located in the interior regions often maintained permanent geographical territories or use areas that are thought to have averaged approximately 30 square miles. Village populations generally ranged from 50–100 inhabitants. It is unclear whether territory and community population size also held for coastal settlements, where food resources may have been more plentiful (White 1963:117; Oxendine 1983:44).

Boscana (1933:65) describes the permanence of Juaneño villages in the following passage:

> "… in the winter they resided in one place and in summer another. This was general among them, excepting in the case of those tribes located on the sea-coast who seldom moved because their maintenance was derived from the sea."

Juaneño chieftainship is also known to have been hereditary in the male line (Kroeber 1925:645).

The Juaneño word for shaman is *pul*, which appears to be the singular of *puplem*, "the initiated" (Kroeber 1925:643). The lack of differentiation between the shaman and those who were fully instructed in sacred tribal lore insinuates that shamans were revered figures. Luiseño shamans were known to have used stone pipes, despite the fact that the common smoking pipe was ceramic (Kroeber 1925:653). This suggests that stone pipes may have religious significance.

History

What is known about the Gabrielino and Juaneño was recorded principally during the initial European expeditions through the Southern California area. Due to the rapid reduction in indigenous population, later expeditions did not encounter the same pristine native populations observed during earlier excursions.

The first recorded contact between the Gabrielino and Europeans occurred on October 7, 1542, when Juan Rodríguez Cabrillo, leading a sailing expedition in his ships the *San Salvador* and the *Victoria*, arrived at Santa Catalina Island (Wagner 1941; Cleland 1962:xi; Páez 1968:7). The next day, Cabrillo reached the mainland near the Palos Verdes Peninsula, sailing across the channel and into what is now known as San Pedro Bay, which he called *Bahia de los Fumos* (Bay of the smokes), where the crew spoke with natives, and they found in a canoe (Wagner 1941:17; Páez 1968:10). This is the first recorded contact between Europeans and mainland Gabrielino.

Spanish Mission Period (1769–1821)

The period from 1769–1821 is often referred to as the Spanish Mission Period (Robinson 1948:51–52). The period began in 1769 with the Portolá expedition of 1769–1770 and ended in 1821, when Mexico gained independence from Spain (McGroarty 1911:117, 148; Avina 1932:29; Robinson 1948:13).

Very little Spanish exploration of the California coast took place between the early 1600s and 1769, most likely due to the limited naval resources available to Spain after the defeat of the Spanish Armada by the English fleet in 1588. Beginning with the Portolá expedition of 1769–1770, however,

mission sites were established along coastal California between San Diego and Sonoma, and the Spanish colonization of Alta (upper) California began.

The first land expedition through California was led by Gáspar de Portolá in 1769–1770. The Portolá Expedition, as it came to be known, traveled north along the coast from San Diego to the Monterey area in the search for Monterey Harbor. The expedition first entered what is now Orange County on July 22, 1769, although the expedition did not travel along the coast in the Laguna area and never had direct contact with the natives inhabiting the APE.

The Portolá Expedition marked the beginning of European settlement and influence in the southern California area. Local native cultures were influenced heavily after the time, not always for the better, and 1769 truly marked the end of the Prehistoric Period and the beginning of the Historic era in Southern California.

From 1769–1823, 21 California missions were ultimately established in Alta California (Lowman 1993:2). Mission *San Diego de Alcalá*, the first and southernmost of the Alta California missions, was established on July 16, 1769 (Lowman 1993:2, 5). The fourth of the Alta California missions, and the first to be established in Gabrielino territory, was Mission *San Gabriel Arcángel*, founded on September 8, 1771, near the present-day city of Montebello. After a location along the Santa Ana River was initially considered, the Montebello site was chosen and the mission founded there in 1771. In 1776, an even better location was found 5 miles closer to the mountains, and the mission was moved to the location where it remains (Lowman 1993:11).

On November 1, 1776, the seventh mission founded in Alta California, Mission San Juan Capistrano, was established in Juaneño territory (Lowman 1993:2, 9). Although having the same name, this mission is not to be confused with the locality identified by Fray Juan Crespí, where Mission San Luis Rey was eventually founded. In 1778, Mission San Juan Capistrano was moved to its present location along Trabuco Creek to take advantage of a more dependable water supply. Although the location of the old mission has been lost to history, its name is still known. The lands occupied by the old mission have been anglicized as *Mission Viejo* (Sleeper 1988). Mission San Juan Capistrano's land holdings were extensive and supported the missionaries and its Indian converts.

Beginning in 1784, Spanish army officers and veterans living in California began receiving land concessions and establishing large, private grazing areas (Cowan 1993:8). Cattle ranching was highly profitable during the Spanish Mission and Mexican Rancho Periods. There were just 25–32 major "grants" made during the Spanish Period, and these were actually concessions that were little more than grazing and settlement permits, since title of ownership remained with the crown (Beck and Haase 1974:24; Cowan 1993:8). However, several hundred land grants were later made by Mexican governors of California during the Mexican Period.

Mexican Rancho Period (1821–1848)

In 1821, Mexico gained independence from Spain, and in 1848, the United States formally obtained California in the Treaty of Guadalupe Hidalgo (Cleland 1962:xiii). The period from 1821–1848 is here referred to as the Mexican Rancho Period (see Robinson 1948:52). It was during this period that

large tracts of land termed *ranchos* were granted by the various Mexican Governors of *alta* California, usually to individuals who had worked in the service of the Mexican government.

Mexican Period land grants were numerous, and like previous Spanish Period grants, were initially grazing concessions (Robinson 1948:65). Mexican Period governors of California granted approximately 700 ranchos, including regrantings, duplications, and splitting of older and larger grants now renamed by heirs of the original grantee (Cowan 1993:9; see Robinson 1948:67). One notable petition for a land grant was made by Pio Pico, Mexican Governor from 1845–1846, who in order to secure *Jamul Rancho,* which was originally awarded him in 1831, "… made a new petition to himself, from himself; and then regranted it to himself, from himself…" (Cowan 1993:9).

The missions were never intended to remain under permanent control of the missionaries. Missions were to have been turned over to Indian leaders within 10 years of their founding, and missionaries were to have moved on to found new missions in an effort to expand the Spanish colonial frontier (McCawley 1995:58). The missionaries avoided secularization for many years by claiming that the Indians were not prepared to run their own affairs, which, in most cases, was probably true. In 1824, the Mexican Congress established rules for the colonization of national lands, and in 1828, the Mexican government enacted specific rules and regulations for colonization of the republic's territories (Robinson 1948:65–66). In 1833, barely more than a decade after gaining independence from Spain, the Mexican government's Secularization Act changed missions into civil parishes. Those natives who had inhabited regions adjacent to a Spanish Period mission were to obtain half of all mission possessions, including land. However, in most instances, this did not occur, and the Secularization Act resulted in the transfer of large mission tracts to politically prominent individuals, instead of to local natives.

The current APE is located in the southern coastal portion of Orange County on the Tustin Plain (refer to Figure 1) and is completely within the boundary of the *Rancho San Joaquin* (Grant No. 500) Mexican Rancho Period land grant (Beck and Haase 1974:37). This grant was not part of a prior Spanish Mission Period concession. The southeastern boundary of *Rancho San Joaquin* is the boundary between the cities of Irvine and Lake Forest and follows Laguna Canyon, Lake Forest Drive, and Bake Parkway for a short distance.

Rancho San Joaquin consisted of a grant of 11 square leagues made in 1837 and 1842 by Governor Juan Bautista Alvarado to José Sepúlveda (Shumway 1993:59). Governor Alvarado made approximately 170 land grants, more than any other Mexican governor of California (Avina 1932:35). In 1867, the American Period Patent for the entire grant area of 48,803 acres was issued to José Sepúlveda. This grant was also known as the *San Joaquin y Cienega de las Ranas*, which is Spanish for "swamp of the frogs" (Meadows 1966:52).

American Period (1848–Present)

Following the end of hostilities between Mexico and the United States, the United States officially obtained California in the Treaty of Guadalupe Hidalgo on February 2, 1848 (Cleland 1962:xiii). In 1850, California was accepted into the Union of the United States, mainly due to the population increase created by the Gold Rush of 1849. In the years immediately following the American acquisition of California, the cattle industry reached its greatest prosperity. Mexican Period land

grants had created large pastoral estates in California, and a high demand for beef during the Gold Rush led to a cattle boom that lasted from 1849–1855. In 1855, however, the demand for California beef began to decline as a result of sheep imports from New Mexico, cattle imports from the Mississippi and Missouri Valleys, and the development of stock breeding farms. When the beef market collapsed, California ranchers were unprepared. Many had borrowed heavily during the boom, mortgaging their land at interest rates as high as 10 percent per month. The collapse of the cattle market meant that many of these ranchos were lost through foreclosure, while others were sold to pay debts and taxes (Cleland 1952:108–114).

Nature also conspired to force economic change. During the winter of 1861–1862, a disastrous series of floods, followed by two years of drought, occurred in California (Cleland 1952:130–131). The drought of the 1860s was a turning point in the economic history of Southern California. The era of the great cattle ranchos ended, and many of the landowners who survived the collapse of the cattle industry were forced to sell their properties due to the drought. In 1864, Sepúlveda sold *Rancho San Joaquin* to the business partnership of Flint, Bixby & Company for $18,000. This company's partners were Thomas and Benjamin Flint, Llewellyn Bixby, and James Irvine I (Cleland 1962:43). The rancho was described as comprising 11 square leagues (50,000 acres) within the following boundaries:

> "Beginning at a hill on the edge of the Sea Beach and running Northerly through the Cañada de la Laguna 15,400 varas to the 'Arroyo del Toro' thence Westerly 17,000 varas to the 'Cerrito de las Ranas' thence from a stone pillar Southerly with the line of the 'Rancho de Santa Ana' 19,150 varas to a point on the Sea Beach, so as to include the 'Bolsa de San Joaquin' thence Easterly along the Sea Beach 14,500 varas to the point of beginning" (Cleland 1962:42).

In 1866, the partnership of Flint, Bixby & Company purchased both *Rancho Lomas de Santiago,* as well as an interest in *Rancho Santiago de Santa Ana.* The two ranchos were added to the existing *Rancho San Joaquin* and included 125,000 acres (Liebeck 1990:6, 10, 11). Although the present-day Irvine Ranch includes three ranchos (*Lomas de Santiago, Santiago de Santa Ana,* and *San Joaquin*), the APE is along the southeastern boundary of what was once *Rancho San Joaquin*.

James Irvine I and the Irvine Ranch

James Irvine I (Dec. 27, 1827–Mar. 15, 1886) immigrated to New York from Ireland in 1846 and soon after became one of the many young men who participated in the California Gold Rush of 1849. After California was admitted to the Union, Irvine worked in his uncle's San Francisco produce business, eventually becoming a co-owner in 1854 (Cleland 1962:60). Irvine used his profits from the business to purchase real estate throughout Southern California.

Following the collapse of the cattle industry in the late 1850s and early 1860s, many landowners turned to sheep ranching. Foremost among the pioneer wool growers in California was Flint, Bixby & Company. Llewellyn Bixby and his cousins Thomas and Benjamin Flint had driven their first flock of sheep from Illinois to California in 1853. In October 1855, Flint, Bixby & Company, along with Col. W.W. Hollister, established its headquarters at *Rancho San Justo* in Monterey County (Cleland 1962:58). Using financial support provided by James Irvine I, the company began to gain a

controlling interest in the wool industry. In 1864, they purchased both *Rancho Lomas de Santiago* and *Rancho San Joaquin,* consolidating the acreage of both ranchos under the name *Rancho San Joaquin* (Meadows 1966:115, 117). By 1867, the company was grazing 30,000 sheep.

In 1876, James Irvine I bought out his partners and became sole owner of *Rancho San Joaquin*. Although Irvine's huge estate retained the name *Rancho San Joaquin* for a time, it eventually became known as the Irvine Ranch (Cleland 1952:50–51; Liebeck 1990:6–14). The decade of the 1880s was a period of change at the Irvine Ranch. It was during this time that agricultural operations were initiated on the ranch, which slowly began a transition from cattle ranching to farming (Liebeck 1990:19–20).

In 1862, the Homestead Act opened up large tracts of land across the State for homesteading that were previously unowned. Homesteading took place on land in Laguna Canyon that was not previously granted. Areas available for homesteading were located on the east side of Laguna Canyon Road south of El Toro Road and included all of Laguna Beach south of where Laguna Canyon Road reaches the ocean. In the 1880s, squatters and homesteaders attempted to occupy land belonging to the Irvine Ranch inland of Laguna Beach (Cleland 1941:166, 172; Marsh 1987). Attorneys and the Irvine Ranch superintendent spent much time evicting these squatters and homesteaders (Cleland 1952). Despite these setbacks, when James Irvine I died in 1886 at the age of 58, he had amassed an estate that comprised nearly 20 percent of what is now Orange County.

James Irvine II and The Irvine Company

Immediately after James Irvine I died in 1886, his brother, George, took over as ranch manager, retaining the position until 1892. In 1892, at the age of 25, James Irvine II (Oct. 16, 1867–Aug. 1947) inherited his father's estate. The same year, James Irvine II was married to Frances A. Plum. In June of 1894, The Irvine Company was incorporated under the laws of West Virginia (Cleland 1952:107).

James Irvine II continued to expand agricultural acreage on the ranch, and in 1895, over 31,000 acres of barley was planted, more than the planted acreage of all other crops combined. The type of barley, Chevalier, was used for brewing purposes and commanded a premium over barley used for feed purposes (Cleland 1952:108-109). In 1896, 1,800 acres of Irvine land were planted in beans and leased to tenants. By the first decade of the 1900s, walnuts, celery, artichoke, rhubarb, and canning peas were being raised on Irvine Ranch land (Cleland 1952:109-111).

To deter squatting on Irvine Ranch land, a system of tenant farming was initiated in 1888 by James Irvine II that was important in the overall history of Orange County as it allowed the Irvine Ranch to remain intact and productive through the 1950s. Land was leased only on an annual basis and renewal depended on the desirability of the tenants and their farming ability. Many tenants remained for two generations as the leases passed from father to son. Tenants supplied seed and farmed on a share-crop basis. The Irvine Company advanced money to its tenants on notes at 10 percent per annum and sometimes carried the notes over from season to season.

In 1902, James Irvine II began considering the idea of selling portions of his ranch, although by 1906, he "…had definitely abandoned all thought of selling the ranch as a whole" (Cleland 1952:113). Townsend-Dayman Investment Company of Long Beach purchased 1,680 acres of the ranch in

Newport for $100–$200 per acre. In 1904, George E. Hart purchased the acreage now known as Corona del Mar (Cleland 1952:114). In addition, an undeveloped tract of 350 acres in Laguna Beach was offered for $125 per acre. The Irvine Ranch remained intact largely though, because James Irvine II did not pursue his original idea of selling portions of the acreage amassed by his father.

James Irvine II and his wife, Frances A. Plum, had three children, James Harvey, Kathryn Helena, and Myford Plum. It is James Harvey Irvine's daughter, Athalie Anita "Joan" Irvine (b. 1933) who is still alive and who is currently the benefactor of the Irvine Museum, featuring Orange County impressionist artwork, and the University of California, Irvine. From childhood, James Harvey Irvine was groomed to inherit the Irvine Ranch; however, in 1935, he died of tuberculosis. It was Myford (April 25, 1898–Jan. 11, 1960) who at the age of 49 succeeded his father as president of The Irvine Company.

At its greatest extent, the Irvine Ranch included 125,000 acres of land that was once part of the three original ranchos: *Rancho San Joaquin*, *Rancho Lomas de Santiago*, and *Rancho Santiago de Santa Ana* (Cleland 1941, 1952; Liebeck 1990:2–4). Much of the more than 600,000 acres that is now Orange County is on land that was once part of these ranchos and later became part of the Irvine Ranch.

Development of Roads and Routes

Many of the major roads through the area originally existed as trails before they became dirt wagon roads and finally paved routes beginning in the early 20th century. For instance, several of the dirt roads in the vicinity of the current APE visible on the 1896 15-minute USGS map (USGS 1896) later became major thoroughfares over time. It is likely that these routes were native trails long before they became the dirt wagon roads visibly depicted on the map.

Interstate 405

I-405 is officially a bypass auxiliary route of I-5 (formerly US-101) known as the San Diego Freeway. It runs from the El Toro "Y" (I-5 interchange) in Irvine 72.4 miles north to Mission Hills near San Fernando, where it rejoins I-5. Its annual average daily traffic count of 374,000 vehicles in the Seal Beach area (2008) makes it the nation's busiest route.

Construction of the route mainly north of Los Angeles International Airport originally known as State Route 7 (SR-7), began in 1957 and was completed by 1961. In 1964, the route was renumbered I-405. The portion of I-405 west of the San Gabriel River was completed soon afterward. The last segment of I-405 constructed was the southern segment through Irvine, including the section joining SR-133. This portion of I-405 was completed in 1969.

Laguna Canyon Road, Laguna Freeway, and State Route 133

The road through Laguna Canyon was originally an Indian trail prior to becoming a rough wagon road leading to the isolated beach community of "Laguna Beach" sometime in the mid-to-late 1800s (Ramsey and Ramsey 1976:44; Turnbull 1988:123). It was this trail that William Brooks followed to the coast sometime prior to 1876, when he filed a claim for 169.24 acres at Arch Beach (now Diamond Street). The route is clearly shown as a dirt road on the 1896 USGS map in nearly the exact

location as it exists today. As depicted on the map (USGS 1896), north of the canyon, the dirt road turned northwest and traveled straight from Laguna Dam approximately 2.75 miles to the south side of San Diego Creek at Sand Canyon Avenue.

Stagecoach service through the canyon was conducted for many years using a Concord Stage. Stage service from Laguna to El Toro and Santa Ana ran daily from 1884–1901 (Ramsey and Ramsey 1976:2; Turnbull 1988:124). William Brooks was Laguna's first stagecoach driver (Turnbull 1988:123) and was also a blacksmith (Ramsey and Ramsey 1976:13). Depending on the source, either William Brooks or his brother, Nathaniel, can be considered the "Father of Laguna" (Ramsey and Ramsey 1976:cover; Turnbull 1988:123). The one-way stagecoach fare between El Toro and Laguna Beach was 25 cents, and between Santa Ana and Laguna Beach was $1.10 (Ramsey and Ramsey 1976:73). Stagecoach rules included:

> *Do not smoke a pipe inside the coach if women are riding. If you have anything to drink pass it around. Let the women on and off first. [Ramsey and Ramsey 1976:79]*

Stagecoach service ended in 1910 (Ramsey and Ramsey 1976:52). In 1910, Laguna Canyon Road was designated a County road at a time when motor vehicles first came into use. In 1914, Laguna Canyon Road was first paved (Meadows 1966:76). Prior to October 9, 1926, when Pacific Coast Highway was opened along the coast between Corona del Mar and Dana Point (Ramsey and Ramsey 1976:54; Turnbull 1988:43), Laguna Beach could only be "… reached only by the winding dirt road through Laguna Canyon" (Robinson 1953:68).

In 1933, Laguna Canyon Road was designated State Highway Route 185. On October 1, 1952, a new 1.8-mile-long segment was added from near Laguna Reservoir (Laguna Dam) north-northeast to I-5, and this segment was called the Laguna Freeway. This is the section of which a portion is the current APE. At that time, the original Laguna Canyon Road led from the Laguna Dam area northwest to Central Avenue (now Sand Canyon Avenue). In 1964, the freeway segment and the segment of Laguna Canyon Road south of the freeway were designated as SR-133. Today, the segment of SR-133 called the Laguna Freeway is also known as Veterans Memorial Highway. The Laguna Freeway segment is not a part of historic Laguna Canyon Road.

The portion of the original historic Laguna Canyon Road north of I-405 and east of Sand Canyon Avenue fell into disuse during the years 1972–1980. This segment ran northwest and disappeared into an agricultural field just east of Sand Canyon Avenue. Beginning about 1994, the historic segment of Laguna Canyon Road north of I-405 was abandoned. It was re-routed to the northeast and now ends at Sand Canyon Avenue north of San Diego Creek.

Local Place Names

Agua Chinon Wash

The name of the wash that joins San Diego Creek just east of the current APE means curly water and was misapplied under the supposition that Agua Chinon Spring was located at its upper end (Meadows 1966:17). In fact, The Sinks (an eroded picturesque area of recent geological activity) are located at the head of Agua Chinon Wash, and a spring is located at the head of Limestone Canyon north of the divide separating The Sinks from Limestone Canyon (USGS 1950). Agua Chinon Wash

drains southwest from The Sinks, and the Wash was identified on some old maps as Tomato Springs Canyon (Brigandi 2006:1). In the 1850s, Limestone Canyon was known as *Cañada de Aguaje del Chinon* (Canyon of Curly's Spring), as a black man named Curly lived there (Stephensen 1932:111 in Brigandi 2006:1). Agua Chinon thus appears to be an abbreviated and misplaced name.

Barton Mound

Barton Mound is the location of one of Orange County's earliest and most infamous shootouts involving the notorious Juan Flores (ca. 1834–1857) and his gang, the *Manillas* (shackles or handcuffs). This incident, known as the *Juan Flores Seige*, has become nearly legendary since its occurrence in 1857 (Sleeper 1969; Hallan 1975:35–40). Although regarded today as a thief, murderer, and outlaw, Juan Flores was then regarded as a folk-hero by Mexican-Americans. Born to a prominent family, Flores was sentenced in 1855 to San Quentin prison for stealing horses. Escaping from prison in October of 1856, Flores and his gang stole horses and cattle, committed armed robbery and murder, and conducted raids against towns and homesteads.

In late 1856 or January 1857, Juan Flores was visiting his girlfriend, Chola Martina, who lived at the Burruel adobe in San Juan Capistrano. With help from Chola Martina, Flores and his gang eventually robbed several local stores and murdered one of the store owners, George Pflugardt (Sleeper 1969:18; Hallan 1975:39). Hearing of the murder, Los Angeles Sheriff James Barton organized a small posse. Heading south along the road to San Juan Capistrano, Sheriff Barton and three of his men, William Little, Charles Baker, and Charles Daly were ambushed and killed by Flores and his gang (Hallan 1975:38) at a location very near the current APE known as Barton Mound (Meadows 1966:24). James R. Barton was just the second Sheriff of Los Angeles County. He was the first to die while in office. The account of the *Juan Flores Seige* is as follows:

> In January of 1857, Juan Flores and a band of desperados called the Manillas committed murder and robbed several stores in San Juan Capistrano. Sheriff James R. Barton and a posse of five men struck out from Los Angeles to apprehend the bandits. They stopped en route at the Sepulveda hacienda on the San Joaquin for breakfast. Barton was warned by Don José [Sepulveda] not to go farther with such a small force, but did not heed the advice. The [posse] party proceeded about 6 miles along the lower road leading to San Juan. Informed that the Sheriff was on his way, the bandits waylaid the posse near a mound about 300 yards southwest of the crossing of the present Laguna Beach Freeway [I-405] and San Diego Creek. Barton and three of his men were killed. The other two were pursued back to the San Joaquin Ranch where several shots "from the rear of the house" turned the robbers, and they gave up the chase. Word reaching Los Angeles, more than 150 men turned out to avenge the killings. Ultimately most of the Manillas were shot, a number hanged, the rest dispersed. [Sleeper 1969:18]

Juan Flores was tried for murder and hanged on February 14, 1857, near the top of Fort Hill in what is now downtown Los Angeles. Addressing the crowd before his execution, Flores said he had committed many crimes and was ready to die. He hoped no one would bear ill will against him. He requested that his face be covered with a white handkerchief, after which he was hanged (Hallan 1975:40). Even though most of the other members of the *Manillas* were later shot or hanged,

strangely, the lawmen seem to have overlooked Chola Martina, who continued to reside at the Burruel Adobe until 1910.

Meadows (1966:24) states the location of Barton Mound is most likely "…a mound about 300 yards southwest of the crossing of the Laguna Beach Freeway and San Diego Creek." In footnote No. 106 to his article, Sleeper (1969:38) states: "'Barton's Mound,' as it is called, lies in the center of the E-¼ of the N-¼ of Irvine Block 138. Tustin Quad, USGS 7.5'Series (1948 edition)." The word "Block" most likely means Section, but this description problematically places the location in a relatively level area some distance north of the junction of I-405 and SR-133. This quarter-section location cannot be correct due to the absence of a mound. Its inaccuracy is probably due to a typographical error.

The 1982 edition of the *Tustin, California* 7.5-minute topographic quadrangle (USGS 1965), shows the original topography of the area with added information. It is very similar to the 1981 edition (USGS 1981). These maps clearly depict two mounds that were altered by freeway construction. The western mound appears to be slightly smaller than the eastern mound. The western mound rose to an elevation of 210 ft while the eastern mound was 230 ft tall. Bee Canyon Wash joins San Diego Creek at the base of the north side of the eastern mound. South of the two mounds, the landform lies at an elevation of 180–190 ft before rising to the south onto the descending ridge from Laguna Canyon. A third, barely perceptible mound exists west of the two aforementioned mounds. The third mound is the recorded location of CA-ORA-391 (Appendix A).

I-405 runs along the south side of these mounds and the dirt road toward San Juan Capistrano, and the route most likely taken by Sheriff James Barton and the posse, most likely followed the current route of I-405 on the south side of these mounds. To ambush someone travelling this route, it would have been more expedient to hide behind the eastern mound, as the path south of the mounds would have passed closest to the eastern mound. The height of the eastern mound would have easily hidden several horsemen until they were 300–400 ft away. Hiding behind the eastern mound would have reduced the chance of being seen by someone approaching from the west. It would also have been possible to have used the western mound for an ambush, but would have resulted in a much greater distance (600–800 ft) between someone approaching than using the eastern mound (300–400 ft). Of course, these are estimates, and as the actual landform of the two mounds no longer exists, it is no longer possible to recreate the exact circumstances. Had these mounds still existed, it might even still be impossible to determine which mound was the actual Barton Mound. Suffice it to say that construction of I-405 probably destroyed Barton Mound.

The possibility also exists that the outlaws could have hidden behind the steep ridge just south of where Agua Chinon Wash joins San Diego Creek. This is the location identified by the SCCIC as P-30-162270 (Appendix A). This would have placed the outlaws even closer to road on which the posse was travelling, although it is unlikely as this location is behind a ridge and not a mound. The "mounds" were the two previously described locations north and separate from the ridge.

Although construction of I-405 in 1969 completely removed the easternmost of the two mounds, the northern edge of the western mound remains. This is the portion of the APE traversed by the NB 1-405 on-ramp from the SB SR-133. Most likely, however, Barton Mound no longer exists. What is known about Barton Mound is that the general locale is California Registered Landmark No. 218

(Meadows 1966:24), and P-30-162270 is its memorialized location on a hillside 500 ft south of where Agua Chinon drains into San Diego Creek, 0.4 mile southeast of the APE.

Irvine

On March 17, 1914, the Myford Post Office changed its name to "Irvine" and the town of Myford was also renamed Irvine (Gudde 1998:179). This was done after a community in Calaveras County that had been named Irvine changed its name to Carson Hill (Smith 1991; Gudde 1998:179). After the University of California, Irvine was established in 1965, the Irvine Post Office became "East Irvine." The area once named Myford is now "Old Town Irvine" and is California State Historical Landmark No. 1004 (Historic District P-30-161894). Existing buildings include the Irvine Bean and Grain Growers Warehouse (1895) and Granary (1947), the Blacksmith Shop (1916, now Knowlwood Restaurant), as well as others that have been moved to the locale.

Laguna Beach and Laguna Canyon Road

The Spanish geographical term *laguna* usually referred to a small lake, but in Spanish Period California, it referred to any lake (Gudde 1998:200). A *diseño* (land claim map) dating from 1841 depicts *Cañada de las Lagunas* (Canyon of the Lagoons, or Lakes) after which the town of Laguna Beach was named (Salley 1977:114; Gudde 1998:200).

On May 15, 1891, a "Lagona Beach" post office was established in what is now Laguna Beach but it was discontinued October 14, 1893. On May 26, 1894, it was reestablished as "Lagona." On September 17, 1904, it was changed to "Laguna" and the word "Beach" was added (Salley 1977:114).

Marine Corps Air Station El Toro

Marine Corps Air Station (MCAS), El Toro was located on the inland side of I-5 near the south end of the APE, south of Sand Canyon Avenue. In 1942, the site was selected by Lieutenant Colonel William J. Fox, and the base was constructed on approximately 4,700 acres of a former lima bean field within the Irvine Ranch. James Irvine II was paid $100,000 for the property, which he resisted selling because it contained the largest lima bean field in North America and was a prime source of revenue for the Irvine Company (Smith 1991:3). The name for the base came from the nearby community of El Toro (the Bull), which in 1940 had a population of 130 people.

Construction of MCAS El Toro began August 3, 1942. Base headquarters was established on November 4, 1942, and runways and taxiways were completed December 1, 1942. Hangars were completed by January 15, 1943. Barracks and officer's quarters were completed by January 20, 1943. In January, the first operation units began to arrive at the base, and on March 17, 1943, the station was officially commissioned with Marine, Navy, and civilian dignitaries present. By 1944, the base was the largest MCAS on the west coast but had doubled in size. By late 1944, MCAS El Toro was home to 1,248 officers and 6,831 enlisted personnel. In 1950, MCAS El Toro was chosen to be the Master Jet Station for the Pacific Fleet Marine Forces and, during the ensuing years, served as the primary base for Marine Corps west coast fighter squadrons.

MCAS El Toro contained four runways, two measuring 10,000 ft in length, and two measuring 8,000 ft. The extensive length of the runways were sufficient to handle the largest military aircraft. While MCAS El Toro was an active base, every U.S. President during the post WWII-era landed in Air Force One at the airfield.

From the 1950s until 1997, MCAS El Toro was the location of the El Toro Air Show, featuring the U.S. Navy Blue Angels and the U.S. Air Force Thunderbirds, as well as new aircraft and military vehicles. The final show in 1997 drew an estimated 2 million visitors. The base was also featured in movies, including the 1986 Clint Eastwood film *Heartbreak Ridge* and the 1996 film *Independence Day*.

Although the land surrounding MCAS El Toro was agricultural at the time the base was constructed, by the 1980s and 1990s, residential development began to replace the nearby agricultural fields. This was problematic, since the noise created by aircraft was not conducive to peaceful residential communities. For this reason and because of military downsizing, in 1993, the base was selected for decommissioning by the Base Realignment and Closure (BRAC) Commission. MCAS El Toro officially closed on July 2, 1999. The land on which the base was constructed is planned for conversion into Orange County's Great Park as well as for construction of residential dwellings, schools, a golf course, and commercial enterprises.

Myford

The center of the Irvine Ranch, which was located west of what is now I-5 and south of Sand Canyon Avenue between the freeway and the BNSF railroad tracks, was originally known as "Myford." Founded in 1887, the town was named after Myford Irvine (1989–1959), the son of James Irvine II (Cleland 1952). The U.S. Post Office here, named Myford, was established on May 20, 1899 (Gudde 1998:179). The small town was built along what was once the Atchison, Topeka and Santa Fe Railway to facilitate shipping produce and contained several buildings, many of which still exist.

Orange County International Raceway

As depicted on the USGS *El Toro, California* 7.5-minute topographic quadrangle map (USGS 1968), Orange County International Raceway (OCIR) was located on the east side of I-5 just south of Bee Canyon Wash and west of MCAS El Toro just 0.5 mile east of the APE. The Raceway was a combined 0.25-mile dragstrip and 2-mile racetrack on Irvine Company land. OCIR hosted racing events from August 5, 1967, until it closed on October 30, 1983. Sports car, motorcycle, midget car, and stock car races, as well as National Hot Rod Association (NHRA) sanctioned drag racing events were all held at OCIR.

OCIR was conceived as one of the most modern dragstrip facilities of the late 1960s. It contained landscaped areas, permanent restrooms and concession stands, reserved permanent seating, drinking fountains, the sport's first electric scoreboard, and a four-story glass-enclosed control tower/administration building. Radio advertising for OCIR included some of the most aggressive ads of the time, featuring a male baritone voice announcing loudly to the audience: "OCIR – Be there!!"

Orange County

Orange County was created March 11, 1889, from a portion of southern Los Angeles County (Maslin 1911:316; Gudde 1998:270). The State Legislature named it for the oranges grown in the area.

Saddleback

Clearly visible at the top of the Santa Ana Mountains to the east is the landmark known as "Saddleback" formed by the two highest peaks in Orange County (Stephenson 1931:3-7). The southernmost, Santiago Peak (5,687 ft), was named in 1894 when the USGS mapped the *Corona* 15-minute topographic quadrangle (Gudde 1998:350). In 1861, the peak was first named Mt. Downey by the Whitney Survey and was also called Trabuco Peak on old maps (Stephenson 1931:7, 10; Meadows 1966:126). It was also called Temescal Mountain (Stephenson 1931:6). "The Indians called it Kalawpa" (Meadows 1966:126). The name Santiago comes from St. James the Apostle, the creek being named after the Portolá Expedition camped along it on July 25, 1769 (Gudde 1998:350; Brigandi 2006:87).

The northern peak, not officially named but locally known prior to 1909 as North Peak, is now Modjeska Peak (Stephenson 1931:7). Modjeska Peak (5,496 ft) was named after actress Helena Modjeska died in 1909, based largely on the efforts of forest ranger J.B. Stephenson (Meadows 1966:101; Gudde 1998:242). Together, the Santiago and Modjeska Peaks resemble a saddle when viewed from the west and for this reason the landmark is known as "Old Saddleback," "Saddleback Mountain," or just "Saddleback" (Stephenson 1931:3-7; Meadows 1966:107; Gudde 1998: 325; Brigandi 2006:59, 67, 81).

Tustin

In 1868, Columbus Tustin purchased 680 acres of the *Rancho Santiago de Santa Ana* land grant and in 1870, laid out Tustin City (Meadows 1966:136; Gudde 1998:404). The U.S. Post Office of Tustin City was established on October 28, 1872. On July 26, 1894, the Post Office dropped the "City" and became just Tustin. The City of Tustin was incorporated in 1927 (Meadows 1966:136).

FIELD METHODS

On July 26, 2019, a pedestrian survey of the APE was completed. Areas of exposed ground that could be accessed, even if vegetated, were surveyed by walking linear transects separated by 7–10 meters (23–33 ft) over larger areas and opportunistically over smaller areas. Inaccessible areas were visually inspected from a distance. Special attention was given to areas where exposed sediment and rodent burrow backdirt was visible. Open areas outside of and adjacent to the APE were also surveyed. Areas within the APE that were not surveyed include existing roadway and concrete culverts. The APE and area around the archaeological site closest to the APE (CA-ORA-391) were carefully surveyed to confirm that no surface evidence of the site remains.

SURVEY RESULTS

GENERAL OBSERVATIONS

Surveyed areas included the SB (western) shoulder of SR-133 within the existing Caltrans ROW, on- and off- ramps, bridge abutments, drainages, the open area between north-and SB lanes, and some undeveloped areas adjacent but outside of Caltrans ROW. Areas were also carefully surveyed for cultural resources but no resources were observed. All areas exhibited high levels of disturbance. Photographs of areas surveyed are provided as Appendix C.

Most of the road shoulder near the highway is open with excellent ground visibility from 40–100 percent. All of the shoulder contains quantities of gravel road rock used as road base for roadway construction. Furthermore, at the north end of the APE, from Barranca Parkway north to Irvine Center Drive, the ground was covered with wood chips that reduced ground visibility to nearly nothing. Irrigated ground vegetation covered areas within on-ramp loops and next to the off-ramp, which also reduced ground visibility to less than 10 percent. The upper edge of a concrete drainage culvert in this area that ran parallel to SR-133 contained exposed sediment that was composed primarily of clay with some silt and little sand, gravel and rock. This area was heavily disturbed, and the ornamental ground cover including shrubbery and trees was well watered and dense.

South of Barranca Parkway, the highway shoulder is not covered with wood chips. It is natural, with natural weeds and grasses with 40–100 percent ground visibility. A concrete culvert exists parallel to the roadway between Barranca Parkway and Alton Parkway to the south, but the majority of the ground is open weed-covered sediment. West of the Caltrans ROW, ornamental shrubbery and trees grow in what is obviously a highly disturbed landscaped area adjacent to parking lots of commercial buildings. There is more sand in this area than there is north of Barranca Parkway.

South of Alton Parkway, ground visibility along the road shoulder is excellent due to recent scraping of the surface. Ground visibility here is 100 percent. A concrete drainage culvert also parallels the highway, and west of the culvert, and outside of Caltrans ROW, grass and ornamental shrubbery completely cover the ground surface negating any ground visibility.

Continuing south, San Diego Creek is reached. The drainage is composed of alluvial sediment including recently carried sand and gravel in a completely disturbed context. The sides of the drainage are concreted and netted with large granitic boulders that appear to have been dumped in order to slow the flow of water and reduce erosion during rain episodes. Asphalt trails run the length of both sides of the drainage.

South of San Diego Creek, the APE curves to the southwest as it becomes the on-ramp to the NB I-405. A low mound is encountered as the on-ramp begins its curve toward the west. On the east side of SR-133 was another low mound that was removed during construction of I-405. The mound on the east may have been Barton Mound (P-30-162270), although this may not ever be known for certain. The mound over which the current south end of the APE traverses has been graded to reduce its height. Its graded north side exhibits some stratigraphy, and the sandstone and siltstone of the Vaqueros Formation that forms the mound is strikingly different from the clay, gravel, and

rock alluvium that exists north of San Diego Creek. Due to the amount of construction disturbance in this area, it is difficult to determine native sediment type along the level south side of the on-ramp atop the mound, although it is obvious that construction of the on-ramp was done by reducing the height of the original mound.

The open level area between the NB and SB lanes of SR-133 is also within the APE. This area exhibited good ground visibility between 60–80 percent due to a low growth of vegetation and road gravel, which was used as the road bed during construction. This portion of the APE, like the western shoulder, was completely graded, and the road gravel identifies the area as highly disturbed from previous construction.

P-30-391 (CA-ORA-391)

Site CA-ORA-391 was originally recorded approximately 300 ft north of the southwestern end of the APE. The site was recorded in 1973 as an artifact scatter with ground and flaked stone artifacts in an area measuring approximately 150x150 meters in size (Maguire and Maguire 1973). The site, once located atop a slight rise or knoll in what was then an open agricultural field, is now developed as the corner of the Tilly's office building with a directly adjoining asphalt parking lot located at 17 Pasteur, Irvine, California. The site record on file with the SCCIC has not been updated since 1984 (Padon 1984).

According to Maguire and Maguire (1973), when CA-ORA-391 was recorded, it was at an elevation of between 180 ft and 190 ft. More recent elevation estimates place the location of CA-ORA-391 at approximately 170 ft, which means that the site would have been levelled to its current (lower) elevation as a result of construction-related ground disturbance for the buildings that currently exist on the site. During a 3-ft deep soil-testing operation, Padon (1984) observed excavation of a trench (measuring 2-ft in width and 12-ft in length) located on the eastern slope of the knoll where CA-ORA-391 was mapped, and stated that no archaeological artifacts were recovered, the soil was silty/sandy poorly-cemented sandstone bedrock, and no cultural deposit, shellfish, or discolored soil from decaying organic material was noted. During the time that the testing occurred, one artifact (mano), was collected from the surface 27 meters west of the soil trench at the top of the knoll where the site had been recorded. While it is unknown if testing has been conducted to determine site boundaries for CA-ORA-391, given that the original location of CA-ORA-391 was atop a knoll that has been since levelled and that the trenching monitored by Padon in 1984 on the eastern side of the knoll containing the site produced no subsurface artifacts, site CA-ORA-391 is considered to no longer exist.

P-30-162270 (Barton Mound)

The mound behind which Juan Flores and his gang of desperados, the Manillas, ambushed and killed Los Angeles Sheriff James R. Barton and three members of the posse chasing Flores in January 1857 no longer exists. The mound was identified as being located near the junction of the road to San Juan Capistrano and Laguna Canyon Road, now the location of the Laguna Freeway and I-405. Construction of I-405 in the Irvine area occurred in 1969. At that time, two mounds were destroyed, one of which was probably Barton Mound. It is unlikely that the actual location of Barton Mound will ever be known. Site P-30-162270 is recorded on the east side of the ridge, 500 ft south of where Agua Chinon meets San Diego Creek, to memorialize the ambush.

STUDY FINDINGS AND CONCLUSIONS

No archaeological resources were identified within the APE through archival research, Native American consultation, or the field survey. The record search identified one cultural resource site in the vicinity of the APE. This archaeological site, CA-ORA-391, was previously recorded 300 ft north of the APE at the south end of the project. Recorded on a small hill at an elevation of 180 to 190 ft atop a knoll, the site is now on a relatively level area at an elevation of approximately 170 ft in the same location as an industrial office building and parking lot.

The APE is partially located on land within Caltrans ROW along the western SB side of SR-133 but also includes areas of temporary construction easements. The archaeological survey showed that the APE exhibits high levels of disturbance from previous road and drainage construction, from shoulder and slope maintenance, and from recent grading. As demonstrated by the results of the record search (Appendix B), many of the prehistoric sites in the record search area and the majority of sites near the APE are located on knolls and areas of higher elevation. Some of these knolls have been graded and levelled, resulting in destruction of the knolls and the sites atop them. This is true of site CA-ORA-391, the cultural resource site closest to the APE. The APE is located at a lower elevation than the knoll recorded as containing CA-ORA-391, and previous excavation to a depth of 3 ft at CA-ORA-391 resulted in the recovery of no artifacts (Padon 1984). While it is unknown if testing has been conducted to determine site boundaries for CA-ORA-391, given that the original location of CA-ORA-391 was atop a knoll that has been since levelled and that the trenching monitored by Padon in 1984 on the eastern side of the knoll containing the site produced no subsurface artifacts, site CA-ORA-391 is considered to no longer exist.

As such, although excavation for retaining walls will extend approximately 3 ft deep into native soil near San Diego Creek, it is unlikely that intact archaeological resources will be encountered during project construction activities.

UNIDENTIFIED CULTURAL RESOURCES

If previously unidentified cultural materials are unearthed during construction, it is Caltrans' policy that work be halted in that portion of the project area until a qualified archaeologist can assess the significance of the find. Additional archaeological surveys will be needed if the project limits are extended beyond the present survey limits.

REFERENCES CITED

Archaeological Research, Inc. (ARI)
1976 Annual Report to The Irvine Company from Archaeological Research, Inc. Archaeological Research, Inc. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-2534).

Avina, Rose H.
1932 Spanish and Mexican Land Grants in California. Unpublished Master's Thesis, Department of History, University of California, Berkeley.

Bean, Lowell John, and Charles R. Smith
1978 Gabrielino. In R. Heizer ed., *Handbook of North American Indians,* Vol. 8, *California*, pp. 538-549. Smithsonian Institution, Washington, D.C.

Beck, Warren A., and Ynez D. Haase
1974 *Historical Atlas of California.* University of Oklahoma Press.

Boscana, Gerónimo
1933 *Chinigchinich: A Revised and Annotated Version of Alfred Robinson's Translation of Father Geronimo Boscana's Historical Account of the Beliefs, Usages, Customs and Extravagancies of the Indians of this Mission San Juan Capistrano Called the Acagchemen Tribe (1846)*. Edited by P. T. Hanna. Reprinted Annotations by John P. Harrington. Foreword by F. W. Hodge. Illustrations by Jean Goodwin. Malki Museum Press, Banning, California. Originally written by Father Boscana in the 1820s, translated and first published by Alfred Robinson in 1846. Fine Arts Press, Santa Ana, California (reprinted, Malki Museum Press, Banning, California, 1978).

Brigandi, Phil
2006 *Orange County Place Names A to Z*. San Diego, California: Sunbelt Publications, Inc.

Bright, William
1978 Preface. In *Chinigchinich: A Revised and Annotated Version of Alfred Robinson's Translation of Father Geronimo Boscana's Historical Account of the Beliefs, Usages, Customs and Extravagancies of the Indians of this Mission San Juan Capistrano Called the Acagchemen Tribe [1846]*. P.T. Hanna, ed. Reprinted. Malki Museum Press, Banning, California. Originally published 1933, Fine Arts Press, Santa Ana, California.\

Cady, R. L.
1985 Historic Property Survey – Negative Findings. Caltrans. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-784).

Cleland, Robert Glass
1941 *The Cattle on a Thousand Hills*, *Southern California*, *1850–1880*. The Huntington Library, San Marino, California.

1952 *The Irvine Ranch*. The Huntington Library, San Marino, California.

1962 Introduction. In *Historic Spots in California*, by M.B. Hoover, H.E. Rensch, and E.G. Rensch, pp. xi–xiv. Fourth printing revised by R. Teiser. Stanford University Press.

Cowan, Robert G.
1993 Preface: California's Land Grants. In Burgess McK. Shumway, *California Ranchos: Patented Private Land Grants Listed by County*, pp. 7-9. Stokvis Studies in Historical Chronology and Thought Number 11. Borgo Press and Sidewinder Press; San Bernardino, California and Glendale, California.

Demcak, Carol R.
1981 Fused Shale as a Time Marker in Southern California: Review and Hypothesis. Unpublished Master's Thesis, Department of Anthropology, California State University, Long Beach.

Desautels, Roger J.
1968 State of California, Department of Parks and Recreation Site Record Forms for Sites P-30-310 (CA-ORA-310), P-30-311 (CA-ORA-311), P-30-312 (CA-ORA-312), and P-30-313 (CA-ORA-313). On file, South Central Coastal Information Center, California State University, Fullerton.

Elsasser, Albert B.
1978 Development of Regional Prehistoric Cultures. In R. Heizer ed., *Handbook of North American Indians, Vol. 8, California*. Smithsonian Institution, Washington, D.C. 37–57.

Fulton, Terri, and Phil Fulton
2005 State of California, Department of Parks and Recreation Site Record Update for P-30-176761. On file, South Central Coastal Information Center, California State University, Fullerton.

Gifford, Eugene W.
1936 Californian Balanophagy. *Essays in Anthropology Presented to A. L. Kroeber*, pp. 87–98. Reprinted in 1971. The California Indians, A Source Book. R. Heizer and M. Whipple, eds. pp. 301–305. University of California Press, Berkeley and Los Angeles.

Gothold, Jane, and John Maguire
1973 Pacific Coast Archaeological Society Survey along the North Side of the San Diego Freeway. Pacific Coast Archaeological Society. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-8).

Gudde, Erwin G.
1998 *California Place Names, the Origin and Etymology of Current Geographical Names*. Fourth edition, revised and enlarged by William Bright. University of California Press.

Hall, Matt C.
1988 For the Record: Notes and Comments on "Obsidian Exchange in Prehistoric Orange County." *Pacific Coast Archaeological Society Quarterly* 24(4):34–48.

Hallan, Pamela
1975 *Dos Cientos Años en San Juan Capistrano*. Water Color Graphics, Irvine, California.

Hamilton, Robert A., and Ken R. Willick
1996 *The Birds of Orange County, California, Status and Distribution*. Sea & Sage Audubon Society, Irvine, California.

Hanna, Phil Townsend
1933 *Chinigchinich* by Geronimo Boscana. Fine Arts Press, Santa Ana, California. (Reprinted by Malki Museum Press, Banning, California, 1978.)

Harrington, John P.
1933 Annotations. In *Chinigchinich: A Revised and Annotated Version of Alfred Robinson's Translation of Father Gerónimo Boscana's Historical Account of the Belief, Usages, Customs and Extravagancies of the Indians of this Mission of San Juan Capistrano Called the Acagchemem Tribe*. Fine Arts Press, Santa Ana, California. (Reprinted, Malki Museum Press, Banning, California, 1978).

1934 A New Original Version of Boscana's Historical Account of the San Juan Capistrano Indians of Southwest California. *Smithsonian Miscellaneous Collections* 92(4):1–62. Smithsonian Institution, Washington, D.C.

Hoover, Mildred Brooke, Hero Eugene Rensch, and Ethel Grace Rensch
1962 *Historic Spots in California*. Fourth printing revised by R. Teiser. Stanford University Press.

Hubbs, Roy
1973 State of California, Department of Parks and Recreation Site Record Forms for Sites P-30-500 (CA-ORA-500) and P-30-501 (CA-ORA-501). On file, South Central Coastal Information Center, California State University, Fullerton.

Hudson, D. Travis
1971 Proto-Gabrielino Patterns of Territorial Organization in Southern Coastal California. *Pacific Coast Archaeological Society Quarterly* 7(2):449-476.

Hunt, Kevin P.
2000 An Archaeological and Paleontological Survey of the Irvine Spectrum GPA Project. Brian F. Smith and Associates. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-2267).

Jaeger, Edmund C., and Arthur C. Smith
1966 *Introduction to the Natural History of Southern California*. California Natural History Guides: 13. University of California Press.

Johnston, Bernice E.
1962 *California's Gabrielino Indians*. Frederick Webb Hodge Anniversary Fund Publication No. 8. Southwest Museum, Los Angeles.

Jones, Carleton, and Carol R. Demcak
1988 State of California, Department of Parks and Recreation Site Record Update for P-30-177 (CA-ORA-177). On file, South Central Coastal Information Center, California State University, Fullerton.

Jones, Roger W.
1991 *The History of Villa Rockledge: A National Treasure in Laguna Beach*. American National Research Institute.

Koerper, Henry C.
1981 Prehistoric Subsistence and Settlement in the Newport Bay Area and Environs, Orange County, California. Unpublished Ph.D. Dissertation, Department of Anthropology, University of California, Riverside.

Koerper, Henry C., and Christopher E. Drover
1983 Chronology Building for Coastal Orange County: The Case from CA-ORA-119-A. *Pacific Coast Archaeological Society Quarterly* 19 (2):1–34.

Kroeber, Alfred L.
1925 *Handbook of the Indians of California.* Bulletin No. 78, Bureau of American Ethnology, Smithsonian Institution, Washington, D.C.

Laylander, Don, and Dan Saunders
1993 *Donax* Exploitation on the Pacific Coast: Spatial and Temporal Limits. *Proceedings of the Society for California Archaeology* 6:313-325.

Les, Kathleen
1981 State of California, Department of Parks and Recreation Site Record Form for P-30-177656. On file, South Central Coastal Information Center, California State University, Fullerton and available online at the City of Laguna Beach Historic Resource Inventory located at: http://www.lagunabeachcity.net/cityhall/cd/preserve/inventory.htm.

Liebeck, Judy
1990 *Irvine: A History of Innovation and Growth*. Pioneer Publications, Houston.

Lowman, Hubert A.
1993 *The Old Spanish Missions of California*. Martha H. Lowman, ed. Lawson Mardon Group Publishers.

Maguire, John, and Bea Maguire
1973 State of California, Department of Parks and Recreation Site Record Form for P-30-391 (CA-ORA-391). On file, South Central Coastal Information Center, California State University, Fullerton.

Marsh, Diann
1987 Historical Resources Report, Laguna Canyon Road House Site. Appendix C, In Rosenthal et al., Test Level Investigations at CA-ORA-308, CA-ORA-309, CA-ORA-502, CA-ORA-974, and CA-ORA-948H, Laguna Canyon, Orange County, California. LSA Associates, Inc. On file, South Central Coastal Information Center, California State University of California, Fullerton.

Maslin, Prentiss
1911 Counties in California. Appendix *In* J. S. McGroarty, *California its History and Romance*, pp 309-322. Grafton Publishing Co., Los Angeles.

McCawley, William
1995 Ethnohistoric Report, Vol. 2. In I. Strudwick et al., Results of Archaeological Significance Testing at Site CA-SDI-10156/12599/H, MCAS Camp Pendleton, San Diego County, California. On file at Marine Corps Air Station Camp Pendleton, Natural Resources Office.

1996 *The First Angelinos: The Gabrielino Indians of Los Angeles*. Malki Museum Press, Banning, California and Ballena Press, Novato, California.

McGroarty, John S.
1911 *California, Its History and Romance*. Grafton Publishing Company, Los Angeles.

Meadows, Don
1966 *Historic Place Names in Orange County*. Paisano Press, Inc., Balboa Island, California.

Merriam, C. Hart
1968 Village Names in Twelve California Mission Records*. University of California Archaeological Survey Report* 74.

Moratto, Michael J.
1984 *California Archaeology*. Academic Press, San Diego.

Morton, Douglas M., and Fred K. Miller
2006 *Geologic Map of the San Bernardino and Santa Ana 30' X 60' Quadrangles, California Showing Mines and Mineral Deposits*. Digital preparation by P. M. Cossette and K. R. Bovard. U. S. Department of the Interior. U. S. Geological Survey.

Morton, Paul K., and Russell V. Miller
1981 *Geologic Map of Orange County, California Showing Mines and Mineral Deposits*. State of California, The Resources Agency. Department of Conservation. California Division of Mines and Geology.

Needham, James G.
1924 Observation of the Life of the Ponds at the Head of Laguna Canyon. *Pomona Journal of Entomology and Zoology* 16:1-12.

Norris, Robert M., and Robert W. Webb
1976 *Geology of California*. Santa Barbara and New York: John Wiley & Sons, Inc.

O'Neil, Stephen
1988 Their Mark upon the Land: Native American Place Names in Orange County and Adjacent Areas. In *The Natural and Social Sciences of Orange County*, edited by H. Koerper. Natural History Foundation of Orange County. 106–122.

Oxendine, Joan
1983 The Luiseño Village During the Late Prehistoric Era. Unpublished Ph.D. Dissertation, Department of Anthropology. University of California, Riverside.

Padon, Beth
1983 Assessment of Archaeological and Paleontological Resources, Irvine Medical Complex, Irvine, California. LSA Associates, Inc. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-669).

1984 Cultural Resource Assessment, Irvine Center Project, Orange County, California. LSA Associates, Inc. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-754).

1985 Archaeological Resource Inventory, City of Irvine and Its Sphere of Influence. LSA Associates, Inc. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-847).

1991 Cultural/Scientific Resources Assessment for Planning Area 13. LSA Associates, Inc. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-1098).

2009 Archaeological and Paleontological Monitoring for California Avenue Widening Project, UCI, Orange County, California and Archaeological and Paleontological Monitoring for Spectrum I (Planning Area 33), City of Irvine, California. LSA Associates, Inc. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-3875).

Páez, Juan
1968 *Cabrillo's Log 1542–1543, A Voyage of Discovery*. Translated by James R. Moriarty and Mary Keistman. The Western Explorer V(2 & 3). Cabrillo Historical Association, San Diego.

Ramsey, Merle, and Mabel Ramsey
1976 *The First Hundred Years in Laguna Beach*. Hastie Printers, Laguna Beach, California.

Reid, Hugo
1852 Los Angeles County Indians. *Los Angeles Star* 1(41)–2(11), February 21–July 24. [Reprinted. The Indians of Los Angeles County: Hugo Reid's Letters of 1852. Edited and annotated by R.F. Heizer. Southwest Museum, Los Angeles.]

Robinson, W.W.
1948 *Land in California*. University of California Press, Berkeley and Los Angeles.

1953 *Panorama: A Picture History of Southern California*. Issued on the 60th Anniversary of Title Insurance and Trust Company. Title Insurance and Trust Company, Los Angeles.

Rosenthal, E. Jane, Beth Padon, William Breece, Pat Jertberg, and Diann Marsh
1987 Test Level Investigations at CA-ORA-308, CA-ORA-309, CA-ORA-502, CA-ORA-974, and CA-ORA-948H, Laguna Canyon, Orange County, California. LSA Associates, Inc. On file, South Central Coastal Information Center, California State University of California, Fullerton.

Salley, Harold E.
1977 *History of California Post Office 1849–1976*. Postal History Associates, Inc. Heartland Printing and Publishing Co., Spring Valley, California.

Schoenherr, Allan A.
1992 *A Natural History of California*. California Natural History Guides: 56. University of California Press.

Schroth, Adella
1979 The History of Archaeological Research on the Irvine Ranch Property: The Evolution of a Company Tradition. Archaeological Resource Management Corp. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-305).

Shumway, Burgess McK.
1993 *California Ranchos: Patented Private Land Grants Listed by County.* Stokvis Studies in Historical Chronology and Thought Number 11. Borgo Press, San Bernardino, California; and Sidewinder Press, Glendale, California.

Sleeper, Jim
1969 The Many Mansions of José Sepulveda. *Pacific Coast Archaeological Society Quarterly* 5(3):1–38.

1988 Rancho Santa Margarita. In *A Hundred Years of Yesterdays*, E. Cramer, K. Dixon, D. Marsh, P. Brigandi, and C. Blamer, eds. pp 159-163.Orange County Centennial, Inc., Santa Ana, California.

Smith, Robert B.
1991 State of California, Department of Parks and Recreation, Application for Registration of Historical Landmark No. 1004, Old Town Irvine (Site Record Form for P-30-161894). On file, South Central Coastal Information Center, California State University of California, Fullerton.

Sparkman, Philip S.
1908 The Culture of the Luiseño Indians. *University of California Publications in American Archaeology and Ethnology* 8(4):187–234.

Stephenson, Terry E.
1931 *Shadows of Old Saddleback*. Santa Ana, California: Press of the Santa Ana High School and Jr. College.

1932 Names of Places in Orange County. *Orange County History Series Volume 2*. Santa Ana, California: Press of the Santa Ana High School and Jr. College.

Strozier, Hardy
1978 The Irvine Company Planning Process and California Archaeology – A Review and Critique. The Irvine Company. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-2225).

Strudwick, Ivan H.
1986 Temporal and Areal Considerations Regarding the Prehistoric Circular Fishhook of Coastal California. Unpublished Master's thesis, Department of Anthropology, California State University, Long Beach.

Turnbull, Karen W.
1988 Laguna Beach and South Laguna. *In* E Cramer, K. Dixon, D. Marsh, P. Brigandi, and C. Blamer eds., *A Hundred Years of Yesterdays: A Centennial History of the People of Orange County and their Communities*, pp. 122–126. The Orange County Centennial, Inc., Santa Ana, California.

United States Geological Survey (USGS)
1896 *Santa Ana, California* 15-minute quadrangle map. United States Geological Survey, Denver, Colorado.

1901 *Santa Ana, California* 15-minute quadrangle map. United States Geological Survey, Denver, Colorado.

1950 *El Toro, California* 15-minute quadrangle map. United States Geological Survey, Denver, Colorado.

1965 *Tustin, California* 7.5-minute quadrangle map. Edition of 1982 United States Geological Survey, Denver, Colorado.

1968 *El Toro, California* 15-minute quadrangle map. United States Geological Survey, Denver, Colorado.

1981 *Tustin, California* 7.5-minute quadrangle map. United States Geological Survey, Denver, Colorado.

Wagner, Henry R.
1941 *Juan Rodriguez Cabrillo: Discoverer of the Coast of California*. California Historical Society, San Francisco.

Wallace, William J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. Southwestern Journal of Anthropology 11(3). (Reprinted in *The California Indians: A Source Book,* edited by R. Heizer and M. Whipple, pp. 186–201. University of California Press. Second Edition, 1971.)

1978 Post-Pleistocene Archaeology 9000–2000 B.C. In *California*, edited by R. Heizer, pp. 25–36. Handbook of North American Indians, Vol. 8, W. Sturtevant, general editor. Smithsonian Institution, Washington D.C.

Warren, Claude N.
1968 Cultural Tradition and Ecological Adaptation on the Southern California Coast. *Eastern New Mexico University Contributions in Anthropology* 1(3):1–4.

Weisbord, Jill
1981 Cultural Resource Survey of the Irvine Center DA, Village 13. LSA Associates, Inc. On file, South Central Coastal Information Center, California State University, Fullerton (Accession No. OR-621).

White, Raymond C.
1963 Luiseño Social Organization. *University of California Publications in American Archaeology and Ethnology* 48(2):91–194. Berkeley and Los Angeles.

Wilke, Philip J.
1978 Late Prehistoric Human Ecology at Lake Cahuilla, Coachella Valley, California. *Contributions of the University of California Archaeological Research Facility Number 38*. University of California, Berkeley.

APPENDIX A

FIGURES

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APPENDIX B

RESULTS OF RECORD SEARCH

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APPENDIX C

SURVEY PHOTOGRAPHS

View of wood-chip covered APE on shoulder of the West (southbound) side of SR-133 from Irvine Center Drive overpass. View to So. July 26, 2019.

View of concrete drainage culvert and densely vegetated Barranca Pkwy loop on-ramp along W. (southbound) side of SR-133 fom Barranca Pkwy overpass. View to No. July 26, 2019.

SR-133 (Laguna Freeway) aka Veterans Memorial Highway. APE on West (southbound) side of SR-133 looking toward Barranca Pkwy overpass. View to So. July 26, 2019.

Sparse grass cover and concrete drainage culvert in APE on W. (southbound) side of SR-133 looking toward Alton Pkwy from Barranca Pkwy overpass. View to So. July 26, 2019.

Recently graded APE on W. (southbound) side of SR-133 looking toward I-405 from Alton Pkwy overpass. W. side of San Joaquin Hills in background. View to So. July 26, 2019.

San Diego Creek (PM 8.59) on the W. (southbound) side of SR-133. View to SW. July 26, 2019.

W. (southbound) side of SR-133 looking toward Alton Pkwy overpass from So. end of APE. No. I-405 on-ramp on left. San Gabriel Mtns in background. View to No. July 26, 2019.

Northbound I-405 on-ramp at SW end of APE. Right side of white Tilly's building on right (17 Pasteur, Irvine) is recorded location of CA-ORA-391. View to W. July 26, 2019.

The far right side (NE corner) of the Tilly's building at17 Pasteur, Irvine is the recorded location of CA-ORA-391. View to NW. July 26, 2019.

Northbound I-405 on-ramp from SR-133 at the SW end of APE. "Old Saddleback" landmark (Santiago Peak and Modjeska Peak) in background. View to E. July 26, 2019.

ATTACHMENT D

NATIVE AMERICAN CONSULTATION RECORD

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ATTACHMENT E

HISTORIC OUTREACH RECORDS

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