APPENDIX F2

Cultural Resources Inventory Report

Cultural Resources Inventory Report
for the
North City Project, City of San Diego,
San Diego County, California
Dudek Project No. 9420-04
PTS 499621

Prepared for:

City of San Diego – Public Utilities Department
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San Diego, California 92123
Contact: Keli Balo

Prepared by:

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DUDEK
605 Third Street
Encinitas, California 92024

SEPTEMBER 2017

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NATIONAL ARCHAEOLOGICAL DATABASE (NADB) INFORMATION

Authors: Matthew DeCarlo, BA; Brad Comeau, MSc; Kara Dotter, MHP; Micah J. Hale, PhD, RPA

Firm: Dudek

Project Proponent: City of San Diego Public Utilities Department

Report Date: September 2017

Report Title: Cultural Resources Inventory Report for the North City Project, City of San Diego, San Diego County, California

Type of Study: Cultural Resources Inventory

Resources: CR 450, NCAWPF-IF-1, NCAWPF-IF-2, NCAWPF-IF-3, P-37-004505, P-37-006660, P-37-009117, P-37-011077, P-37-011459, P-37-011611, P-37-011612, P-37-011761, P-37-012138, P-37-012139, P-37-012408, P-37-012439, P-37-012453, P-37-013629, P-37-013630, P-37-013651, P-37-013846, P-37-014119, P-37-014654, P-37-014655, P-37-014656, P-37-014657, P-37-014658, P-37-014660, P-37-014661, P-37-014961, P-37-014981, P-37-015477, P-37-018327, P-37-026967, P-37-026969, P-37-026974, P-37-035477, P-37-035478, P-37-036497

USGS Quads: Del Mar, CA (1994), El Cajon, CA (1996), La Jolla (1996), La Mesa (1994), Poway, CA (1996), San Vicente Reservoir (1996), Township 14 South: Range 1 East, 1 West, 2 West; Township 15 South: Range 1 East, 1 West, 2 West, 3 West; Township 16 South: Range 2 West, 3 West

Acreage: Approximately 1,566

Permit Numbers: N/A

Keywords: Lake Miramar Reservoir; San Vicente Reservoir; intensive pedestrian survey; Kumeyaay; bedrock milling station; handstone; millingstone; pestle, mortar; slick; basin; Cottonwood; projectile point; biface; flakedstone tool; ceramic; brownware; pipe fragment; prehistoric, isolate, historic address, homesteading, Scripps

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
ADD	Assistant Deputy Director
ADRP	Archaeological Data Recovery Program
AME	Archaeological Monitoring Exhibit
APE	area of potential effects
BI	Building Inspector
CCR	California Code of Regulations
CCS	cryptocrystalline silicates
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
City	City of San Diego
CM	Construction Manager
cmbs	centimeters below surface
CRHR	California Register of Historical Resources
CRMTP	Cultural Resources Monitoring and Treatment Plan
CSVR	Consultant Site Visit Record
DPR	Department of Parks and Recreation
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
HRG	Historical Resources Guidelines
IRAT	In-Reservoir Alternative Terminus
LFG Pipeline	Landfill Gas Pipeline
MAT	Marina Alternative Terminus
MBC	Metro Biosolids Center
MCAS	Marine Corps Air Station
Miramar WTP	Miramar Water Treatment Plant
MLD	Most Likely Descendent
MM	Mitigation Measure
MMC	Mitigation Monitoring Coordination
Morena Pipelines	Morena Wastewater Forcemain and Brine/Centrate Line
NAHC	Native American Heritage Commission
NCPWF	North City Pure Water Facility
NCWRP	North City Water Reclamation Plant
NHPA	National Historic Preservation Act
North City Pipeline	North City Pure Water Pipeline
North City Pump Station	North City Pure Water Pump Station
NRHP	National Register of Historic Places
PI	Principal Investigator
PRC	Public Resources Code
RE	Resident Engineer
San Vicente Pipeline	San Vicente Pure Water Pipeline
SHPO	State Historic Preservation Officer

Acronym/Abbreviation	Definition
STP	shovel test pit
STU	shovel test unit
TAT	Tunnel Alternative Terminus

MANAGEMENT SUMMARY

The City of San Diego Public Utilities Department (City) contracted Dudek to initiate the processing of a joint Environmental Impact Report (EIR) and Environmental Impact Statement (EIS) in preparation for the North City Phase 1 of the Pure Water Program (North City Project). As a requirement of the EIR/EIS, a cultural resources inventory was conducted for the North City Project's area of potential effect (APE), which included the North City Project footprint and a 100-foot buffer. By identifying the cultural resources within the North City Project APE, this inventory is intended to guide the City in its management of these resources.

The North City Project consists of multiple components, including the North City Pure Water Facility, the North City Water Reclamation Plant Expansion, the Morena Pipelines (Wastewater Forcemain and Brine/Centrate Line), the North City Renewable Energy Facility, the Landfill Gas Pipeline, North City Pure Water Facility Influent Pump Station, North City Pure Water Pump Station, and Morena Pump Station. Additionally, the North City Project includes two proposed alternative reservoirs to receive the purified water produced by the North City Pure Water Facility: the Miramar Reservoir and San Vicente Reservoir. Alternative routes have also been proposed within several of the North City Project components. This study has separately inventoried the cultural resources identified in each of the North City Project components' APE to better assist the City in managing these resources.

This inventory included a records search of data obtained from the South Coastal Information Center at San Diego State University. The records search found that 557 studies have previously inventoried portions of the North City Project APE, leaving roughly 5% previously unsurveyed. These previous studies have identified 718 cultural resources within 1 mile of the North City Project APE, 38 of which are located within the APE.

The survey of the North City Project APE was conducted on July 25–29, August 27, and October 18, 2016. The APE is located in a highly developed area and it was determined prior to field work that survey of the entire APE would be unproductive. The survey team first conducted a reconnaissance survey of the entire APE in a motor vehicle. This allowed the survey team to assess the APE and identify undeveloped, or at least less developed, portions of the APE where ground surface was visible and archaeological resources could be identified. Pedestrian survey identified one newly recorded cultural resource within the APE. Segments of the project area which are covered with asphalt and concrete were not specifically surveyed with formal transects as the ground surface is not visible in those areas.

Of the 39 cultural resources identified within the North City Project APE, 11 were found to no longer be extant (i.e., have been demolished) and 9 resources are identified as isolates which are not considered eligible for listing on the National Register of Historic Places (NRHP) or

the California Register of Historical Resources (CRHR). Additionally, there is 1 cultural resource within the APE that will be impacted by proposed North City Project activities; however, this resource has been previously recommended not eligible for listing in the NRHP or the CRHR. One previously recorded resource was determined to be non-cultural. These 21 resources, consisting of demolished sites and insignificant isolates, will not require any management considerations during the construction of the North City Project.

The remaining 17 cultural resources identified within the North City Project APE require management consideration in the form of avoidance using limited protection measures. Possible protection measures might include establishing work limits, marking environmentally sensitive areas (ESAs) with signage, and worker training.

Prior to refinements of the North City Project engineering, it appeared that two unevaluated resources identified within the North City Project APE may have been impacted during construction. Previously identified P-37-013630 and newly discovered P-37-036497 are both located adjacent to the San Vicente Pure Water Pipeline – Tunnel Alternative Terminus APE. Both prehistoric sites were evaluated through close-interval survey and excavation of four shovel test pits (STPs). Additionally, a 1- by 0.5-meter test unit was excavated at P-37-013630. The STPs excavated at P-37-036497 produced little evidence of a subsurface deposit, and Dudek recommends P-37-036497 not eligible for listing on the NRHP or CRHR under any significance criteria. The excavated STPs and the test unit at P-37-013630 documented a significant subsurface deposit. As such, Dudek recommends P-37-013630 eligible for listing on the NRHP and CRHR under criteria D and 4, respectively. Although within a proposed staging area, P-37-013630 is located on top of the hillside terrace that is at least 12 feet above the ground surface. Since the evaluation of these two resources, the City has committed to avoiding these resources. Thus, the current project will not impact any known resources.

1 PROJECT DESCRIPTION AND LOCATION

The Pure Water Program is the City of San Diego's Public Utilities Department proposed program to utilize advanced water purification technology to produce potable water from recycled water. The City of San Diego (City), with the United States Bureau of Reclamation as the federal lead agency, contracted Dudek to initiate the processing of a joint Environmental Impact Report (EIR) and Environmental Impact Statement (EIS) in preparation for the North City Project, Pure Water San Diego Program (North City Project). As a requirement of the EIR/EIS, a cultural resources inventory was conducted for the North City Project's area of potential effect (APE). In accordance with the City of San Diego Cultural Resources Guidelines, separate technical reports are required for the archaeological and built environment resources. The APEs for these studies are not the same width.

The North City Project consists of multiple components, including the North City Pure Water Facility (NCPWF), the North City Water Reclamation Plant Expansion (NCWRP), the Morena Waste Water Forcemain and Brine/Centrate Line (Morena Pipelines), the North City Renewable Energy Facility, the Landfill Gas (LFG) Pipeline, NCPWF Influent Pump Station, North City Pure Water Pump Station (North City Pump Station), and the Morena Pump Station. The purified water produced at the NCPWF would then be conveyed to either Miramar or San Vicente Reservoir through the North City Pure Water Pipeline (North City Pipeline) or San Vicente Pure Water Pipeline (San Vicente Pipeline), respectively. The proposed Project footprint extends from the existing NCWRP at 4949 Eastgate Mall to the proposed Morena Pump Station near the intersection of Friars Road and Interstate 5 in the south and will extend east to either the Miramar Reservoir or the San Vicente Reservoir (Figure 1, Regional Map). The APE is located on the Del Mar, El Cajon, La Jolla, La Mesa, Poway, and San Vicente Reservoir, California U.S. Geological Survey quadrangles (Figures 2A–2L, Vicinity Maps). Due to the preliminary nature of this report, the exact North City Project footprint and pipeline route have not yet been determined. To ensure that all potentially impacted archaeological resources are identified and to accommodate minor engineering adjustments, the current APE includes a 100-foot buffer around all proposed project facilities, temporary work areas, and all pipeline routes (Figure 3, Miramar Reservoir Alternative; Figure 4, San Vicente Reservoir Alternative; and Figures 5A–5L, APE Maps). Several of the pipeline segments will be installed using directional drilling. Although this method of drilling does not impact the surface of the pipeline route, the pipeline routes are still included within the APE. Likewise, a segment of repurposed pipeline will not impact the surface but is still included in the APE. Large portions of the APE are located within highly developed areas and preferential placement of the pipeline is within existing utility corridors and paved roadways. As such, a pedestrian survey has been deemed unnecessary in highly developed areas of the APE (see Section 4, Methods). The entire APE was subject to reconnaissance survey in a vehicle so less developed areas could be identified and earmarked for pedestrian survey.

This report documents the results of the North City Project archaeological resources inventory including a records search, reconnaissance vehicle survey, pedestrian survey, resource

documentation, and Native American participation. The goal of this inventory is to provide data to the City of San Diego to aid in the management of archaeological resources during the implementation of the North City Project.

1.1 Regulatory Context

This project is subject to federal, state, and local regulations regarding cultural resources. The following section provides a summary of the applicable regulations, policies, and guidelines relating to the proper management of cultural resources for this project.

1.1.1 36 CFR 800 and Section 106 of the NHPA

The National Historic Preservation Act (NHPA) established the National Register of Historic Places (NRHP) and the President's Advisory Council on Historic Preservation, and provided that states may establish State Historic Preservation Officers (SHPOs) to carry out some of the functions of the NHPA. Most significantly for federal agencies responsible for managing cultural resources, Section 106 of the NHPA directs that "[t]he head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP." Section 106 also affords the President's Advisory Council on Historic Preservation a reasonable opportunity to comment on the undertaking (16 U.S.C. 470f).

36 Code of Federal Regulations, Part 800 implements Section 106 of the NHPA. It defines the steps necessary to identify historic properties (those cultural resources listed in or eligible for listing in the NRHP), including consultation with federally recognized Native American tribes to identify resources with important cultural values; to determine whether or not they may be adversely affected by a proposed undertaking; and to outline the process for eliminating, reducing, or mitigating the adverse effects.

The content of 36 CFR 60.4 defines criteria for determining eligibility for listing in the NRHP. The significance of cultural resources identified during an inventory must be formally evaluated for historical significance in consultation with the California SHPO to determine if the resources are eligible for inclusion in the NRHP. Cultural resources may be considered eligible for listing if they possess integrity of location, design, setting, materials, workmanship, feeling, and association. The criteria for determining eligibility are essentially the same in content and order as those outlined under the California Environmental Quality Act (CEQA), but the criteria under NHPA are labeled A through D (rather than 1–4 under CEQA).

Regarding criteria A through D of Section 106, the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, cultural resources, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

A. Are associated with events that have made a significant contribution to the broad patterns of our history; or

B. Are associated with the lives of persons significant in our past; or

C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. Have yielded or may be likely to yield, information important in prehistory or history (36 CFR 60.4).

The President's Advisory Council on Historic Preservation provides methodological and conceptual guidance for identifying historic properties. In 36 CFR 800.4, the steps necessary for identifying historic properties include:

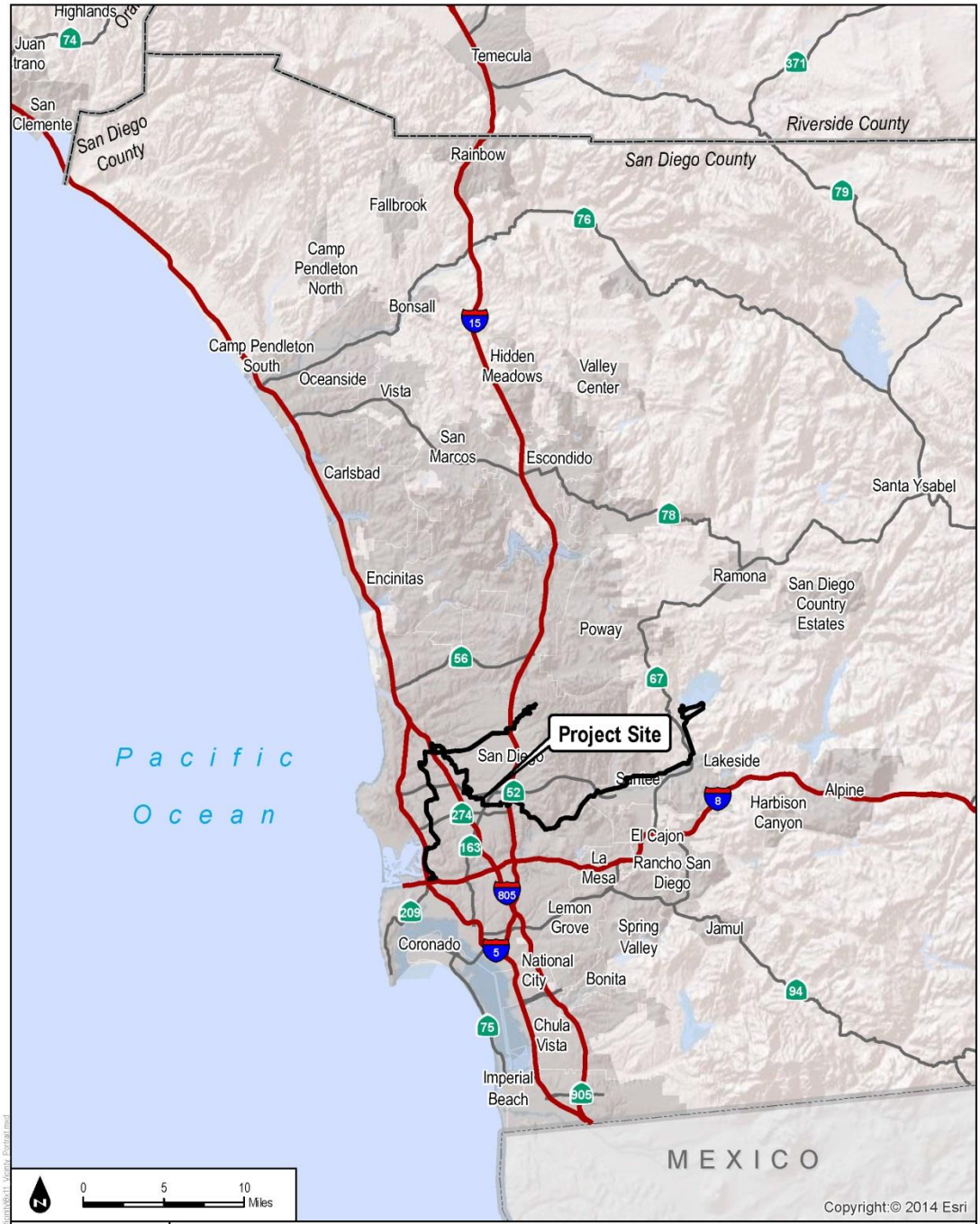
- Determine and document the APE (36 CFR 800.16(d)).
- Review existing information on historic properties within the APE, including preliminary data.
- Confer with consulting parties to obtain additional information on historic properties or concerns about effects to these.
- Consult with Native American tribes (36 CFR 800.3(f)) to obtain knowledge on resources that are identified with places which they attach cultural or religious significance.
- Conduct appropriate fieldwork (including phased identification and evaluation).
- Apply NRHP criteria to determine a resource eligibility for NRHP listing.

Fulfilling these steps is generally thought to constitute a reasonable effort to identify historic properties within the APE for an undertaking. The obligations of a federal agency must also assess whether an undertaking will have an adverse effect on cultural resources. An undertaking will have an adverse effect when:

> ... an undertaking may alter, directly or indirectly, any of the characteristics of a historic property hat qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Consideration shall be

> given to all qualifying characteristics of a historic property, including those that may have been identified subsequent to the original evaluation of the property's eligibility for the National Register. Adverse effects may include reasonably foreseeable effects caused by the undertaking that may occur later in time, be farther removed in distance or be cumulative (36 CFR Part 800.5(1)).

The process of determining whether an undertaking may have an adverse effect requires the federal agency to confer with consulting parties in order to appropriately consider all relevant stakeholder concerns and values. Consultation regarding the treatment of a historic property may result in a Programmatic Agreement (PA) and/or Memorandum of Agreement between consulting parties that typically include the lead federal agency, SHPO, and Native American tribes if they agree to be signatories to these documents. Treatment documents—whether resource-specific or generalized—provide guidance for resolving potential or realized adverse effects to known historic properties or to those that may be discovered during implementation of the undertaking. In all cases, avoidance of adverse effects to historic properties is the preferred treatment measure and it is generally the burden of the federal agency to demonstrate why avoidance may not be feasible. Avoidance of adverse effects may not be feasible if it would compromise the objectives of an undertaking that can be reasonably said to have public benefit. Other non-archaeological considerations about the benefit of an undertaking may also apply, resulting in the determination that avoidance is not feasible. In general, avoidance of adverse effects is most difficult when a permitted undertaking is being implemented, such as identification of an NRHP-eligible archaeological resource during earthmoving.


Highlands
Juan trano
74
San Clemente
San Diego County
Temecula
371
Riverside County
Rainbow
San Diego County
79
Fallbrook
76
Camp Pendleton North
Bonsall
15
Camp Pendleton South
Oceanside
Vista
Hidden Meadows
Valley Center
San Marcos
Escondido
Carlsbad
Santa Ysabel
78
Encinitas
Ramona
San Diego Country Estates
Poway
56
67
Project Site
Pacific Ocean
San Diego
Lakeside
Santee
52
8
Alpine
Harbison Canyon
274
El Cajon
163
La Mesa
Rancho San Diego
805
209
Lemon Grove
Spring Valley
Jamul
Coronado
5
National City
Bonita
94
75
Chula Vista
Imperial Beach
905
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Miles
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FIGURE 1
Regional Map
North City Pure Water Project

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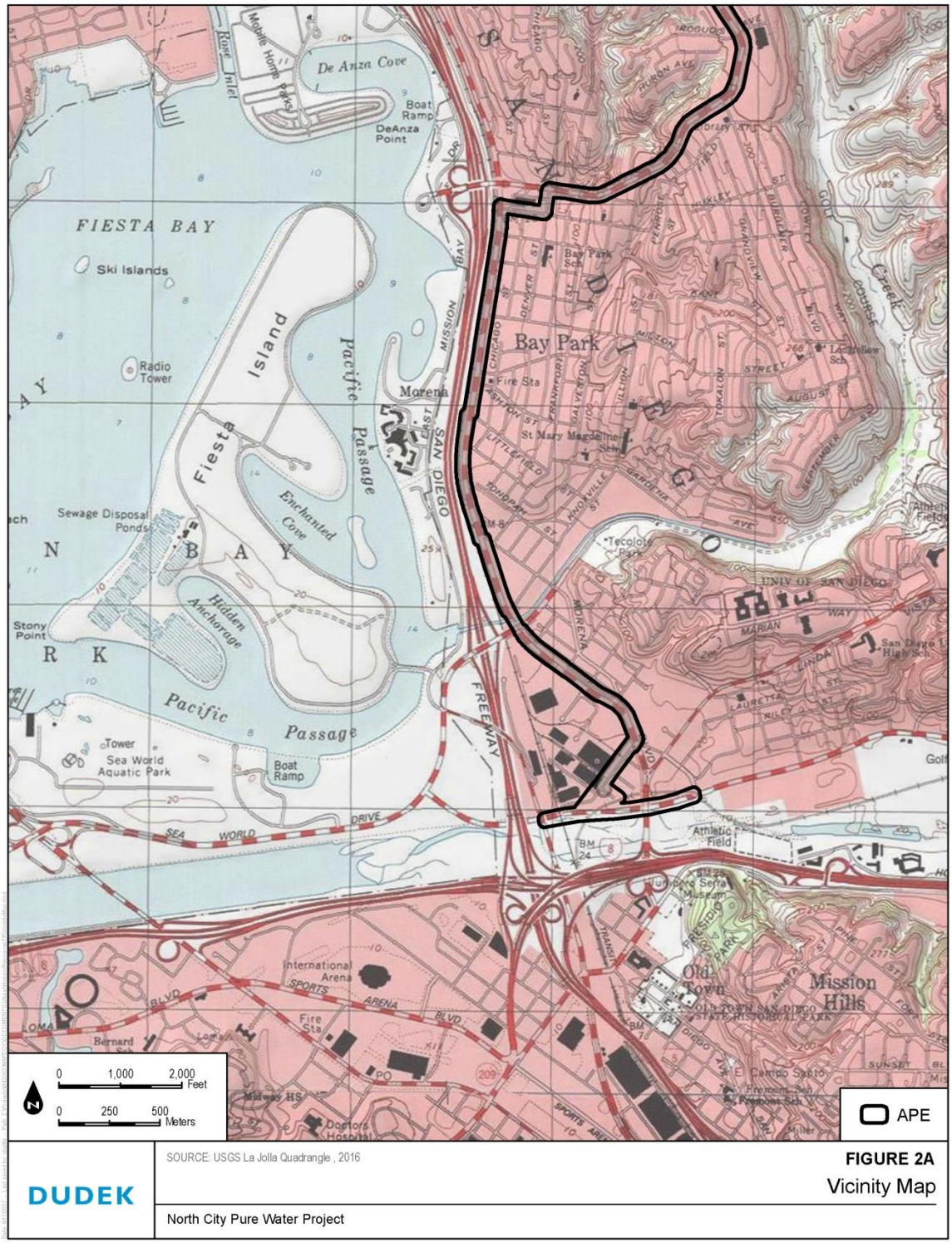
De Anza Cove
Mobile Home Park
Boat Ramp
DeAnza Point
FIESTA BAY
Ski Islands
Radio Tower
Fiesta Island
Pacific Passage
Enchanted Cove
Hidden Anchorage
Sewage Disposal Ponds
Stony Point
Morena
Bay Park
Fire Sta
St Mary Magdalen Sch
Tecolote Park
Univ of San Diego
San Diego High Sch
Athletic Field
Tower
Sea World Aquatic Park
Boat Ramp
SEA WORLD DRIVE
FREEWAY
SAN DIEGO
MISSION BAY
International Arena
SPORTS ARENA BLVD
Fire Sta
Doctors Hospital
Old Town
Old Town San Diego State Historical Park
Mission Hills
Serra Museum
Presidio Park
0 1,000 2,000 Feet
0 250 500 Meters
APE
SOURCE: USGS La Jolla Quadrangle , 2016
FIGURE 2A
Vicinity Map
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North City Pure Water Project

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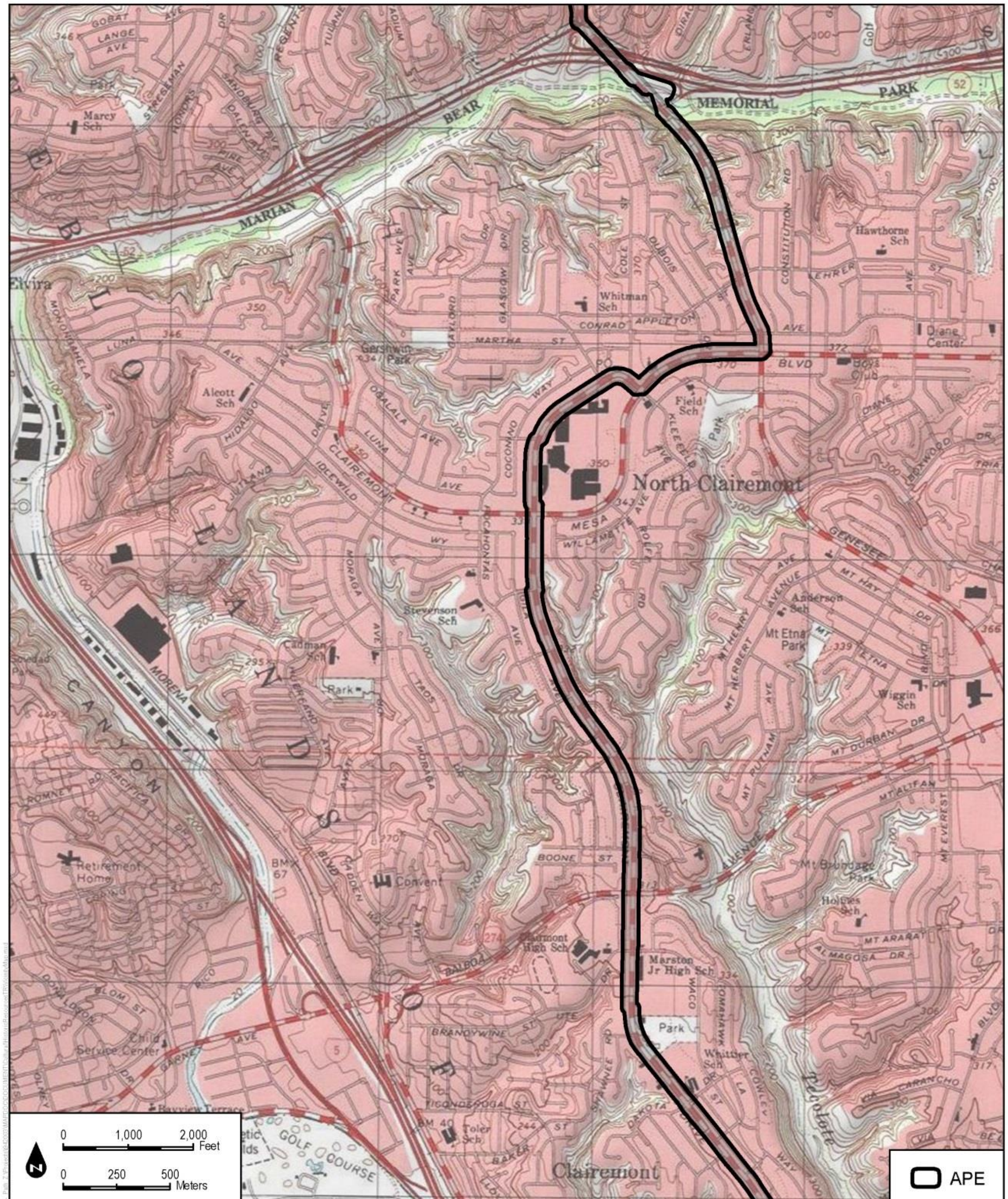

SOURCE: USGS La Jolla Quadrangle, 2016

FIGURE 2B
Vicinity Map

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North City Pure Water Project

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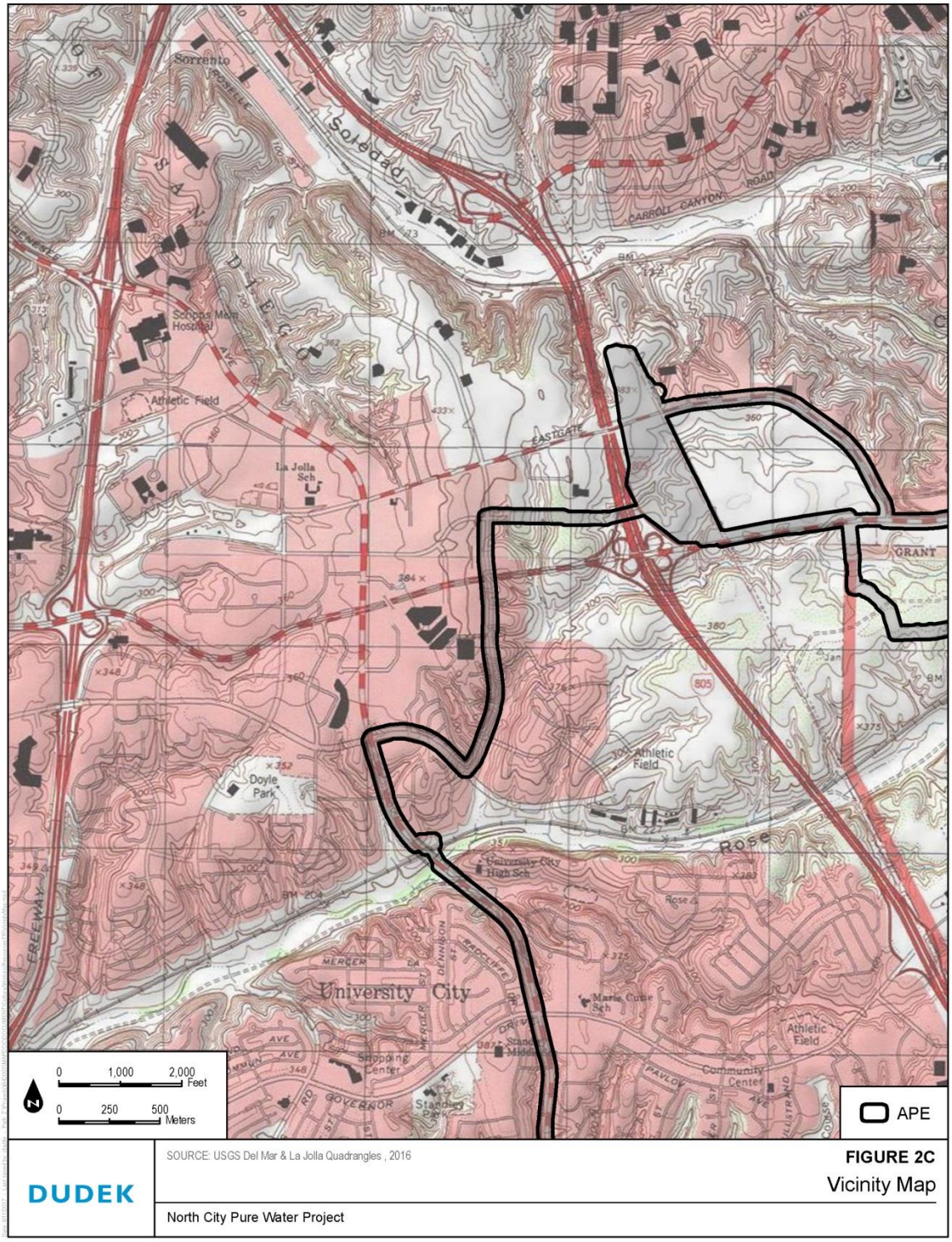
Sorrento
Soledad
CARROLL CANYON ROAD
Scripps Mem Hospital
Athletic Field
EASTGATE
La Jolla Sch
GRANT
805
Athletic Field
Doyle Park
Rose
University City High Sch
Rose
MERCER
University City
Marie Curie Sch
Athletic Field
Shopping Center
Community Center
GOVERNOR
Standley Park
PAVLOV
FREEWAY
0 1,000 2,000 Feet
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APE
SOURCE: USGS Del Mar & La Jolla Quadrangles , 2016
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FIGURE 2C
Vicinity Map
North City Pure Water Project

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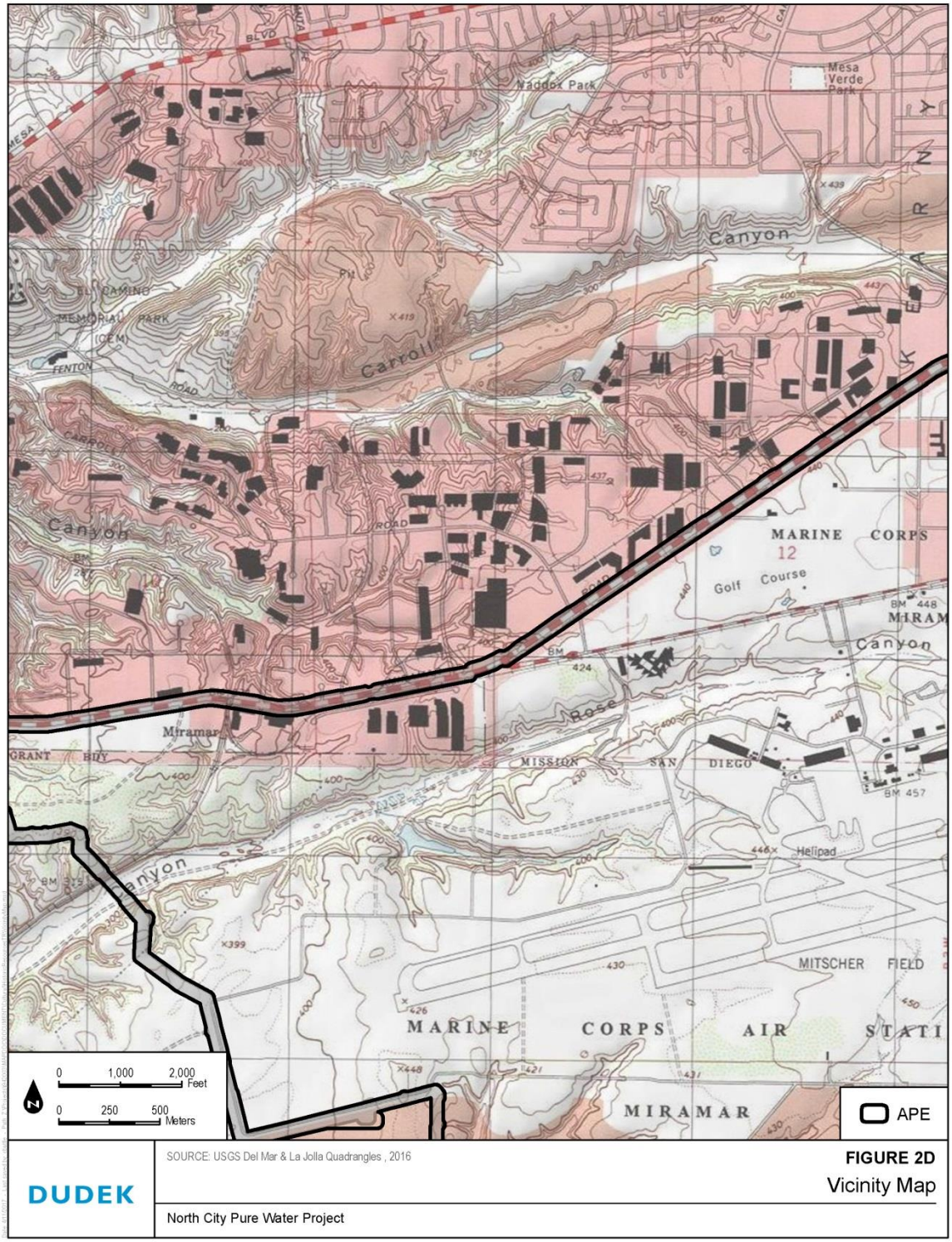
Naddox Park
Mesa Verde Park
Canyon
Carroll
MEMORIAL PARK
FENTON ROAD
MARINE CORPS
12
Golf Course
Canyon
Miramar
GRANT
MISSION
SAN DIEGO
Helipad
MITSCHER FIELD
MARINE CORPS AIR STATI
MIRAMAR
0 1,000 2,000 Feet
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APE
SOURCE: USGS Del Mar & La Jolla Quadrangles , 2016
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FIGURE 2D
Vicinity Map
North City Pure Water Project

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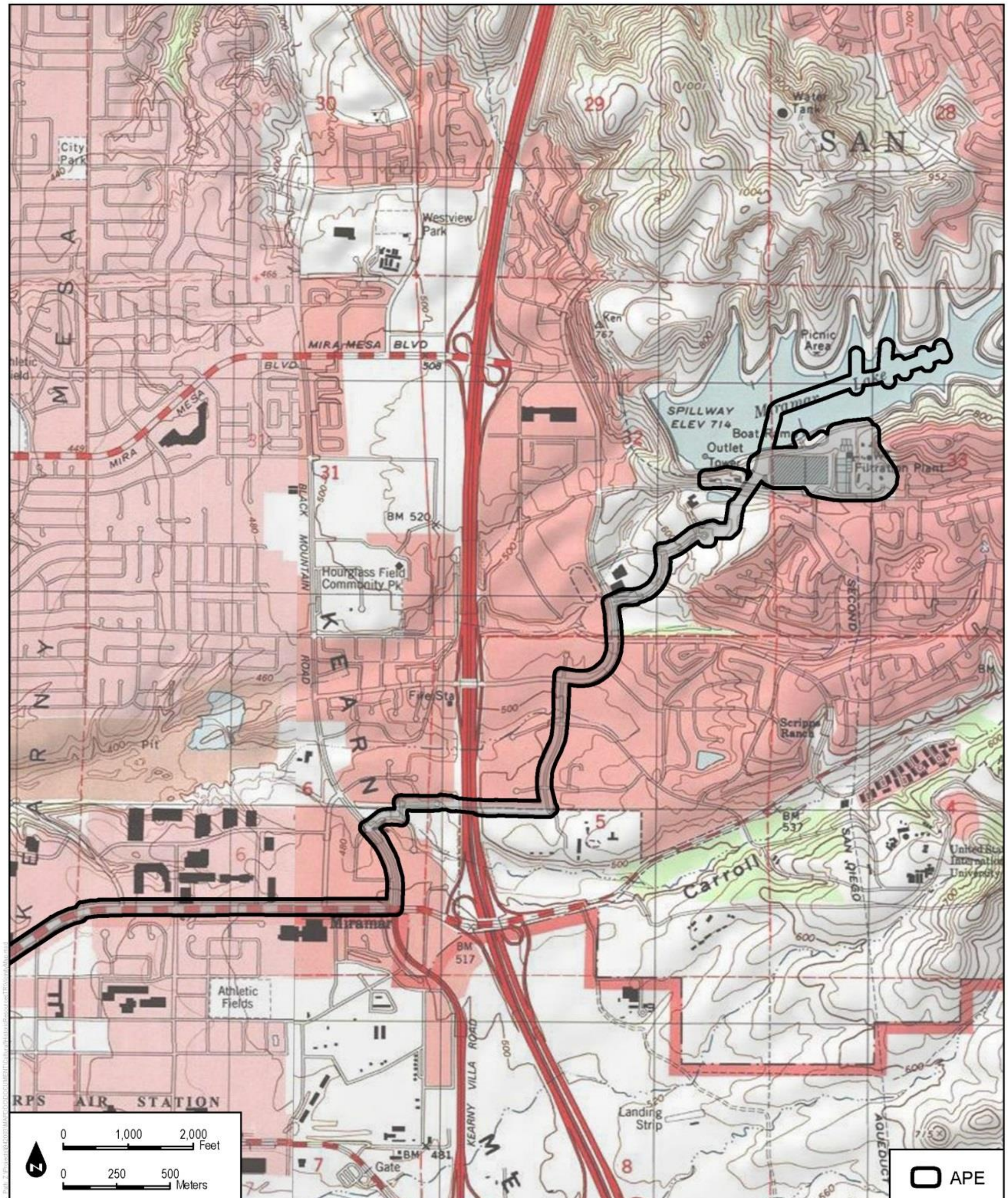

SOURCE: USGS Poway & Del Mar Quadrangles , 2016

FIGURE 2E

Vicinity Map

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North City Pure Water Project

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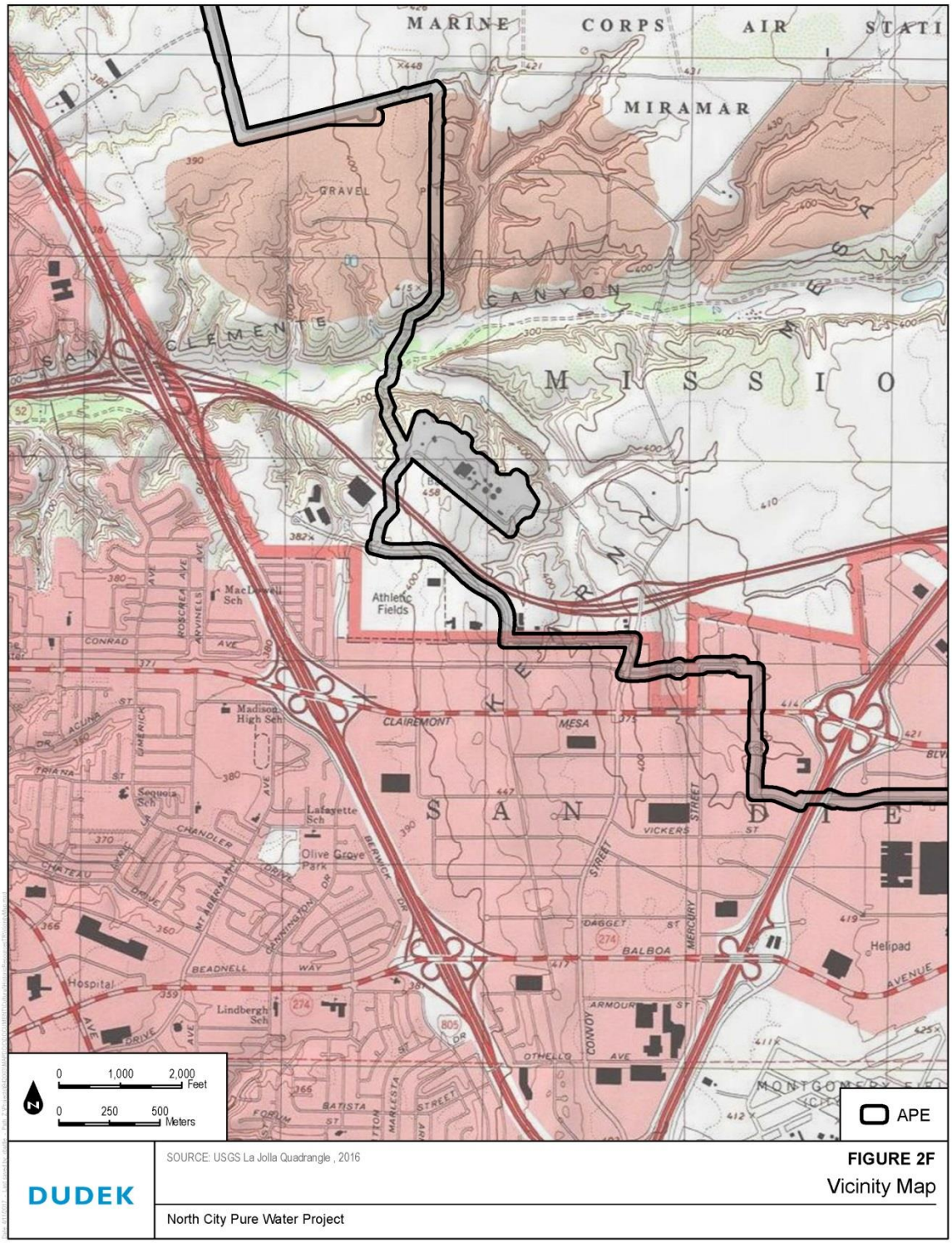
MARINE CORPS AIR STATI
MIRAMAR
GRAVEL
CANYON
SAN CLEMENTE
M I S S I O
Athletic Fields
MacDowell Sch
Madison High Sch
CLAIREMONT MESA
S A N D I E
Lafayette Sch
Olive Grove Park
Sequoia Sch
Lindbergh Sch
Hospital
Helipad
BALBOA AVENUE
CONRAD
CHANDLER
BEADNELL WAY
VICKERS STREET
DAGGET ST
ARMOUR ST
OTHELLO AVE
BATISTA STREET
0 1,000 2,000 Feet
0 250 500 Meters
APE
SOURCE: USGS La Jolla Quadrangle , 2016
FIGURE 2F
Vicinity Map
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North City Pure Water Project

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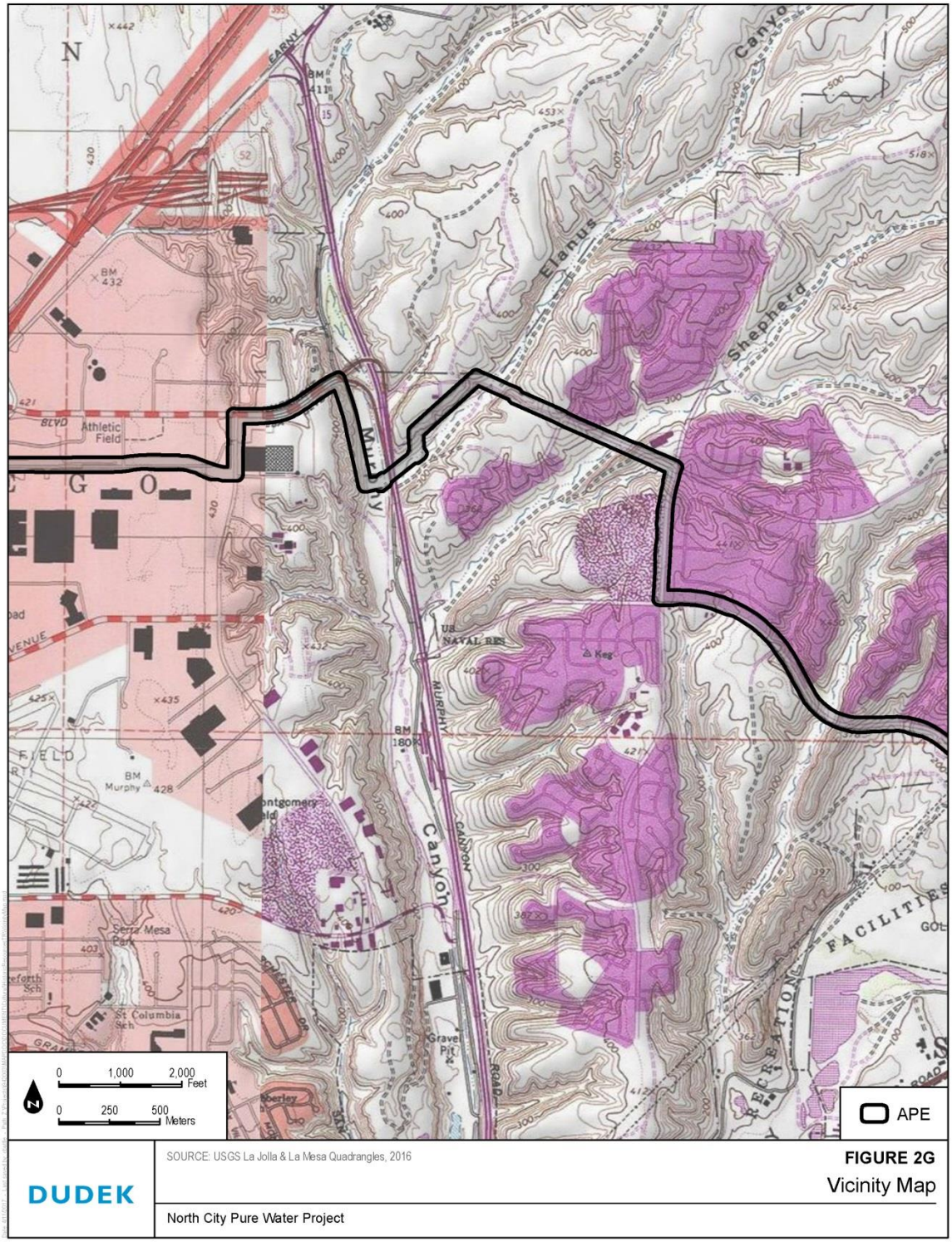
N
Athletic Field
Murphy Canyon
Elanus
Shepherd
US NAVAL RES
Keg
Serra Mesa Park
St Columbia Sch
Gravel Pit
0 1,000 2,000 Feet
0 250 500 Meters
APE
SOURCE: USGS La Jolla & La Mesa Quadrangles, 2016
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FIGURE 2G
Vicinity Map
North City Pure Water Project

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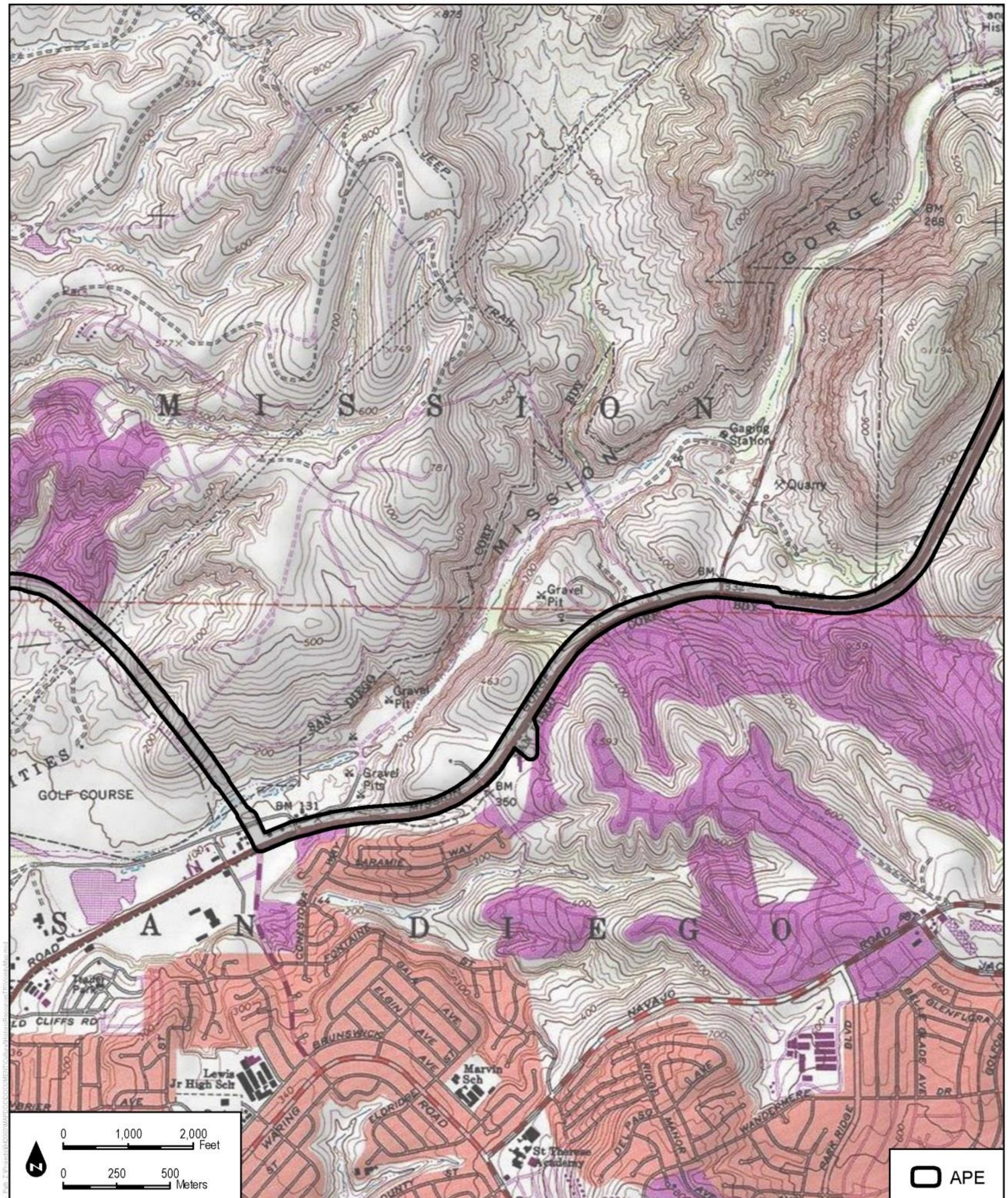

SOURCE: USGS La Mesa Quadrangle , 2016

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FIGURE 2H
Vicinity Map

North City Pure Water Project

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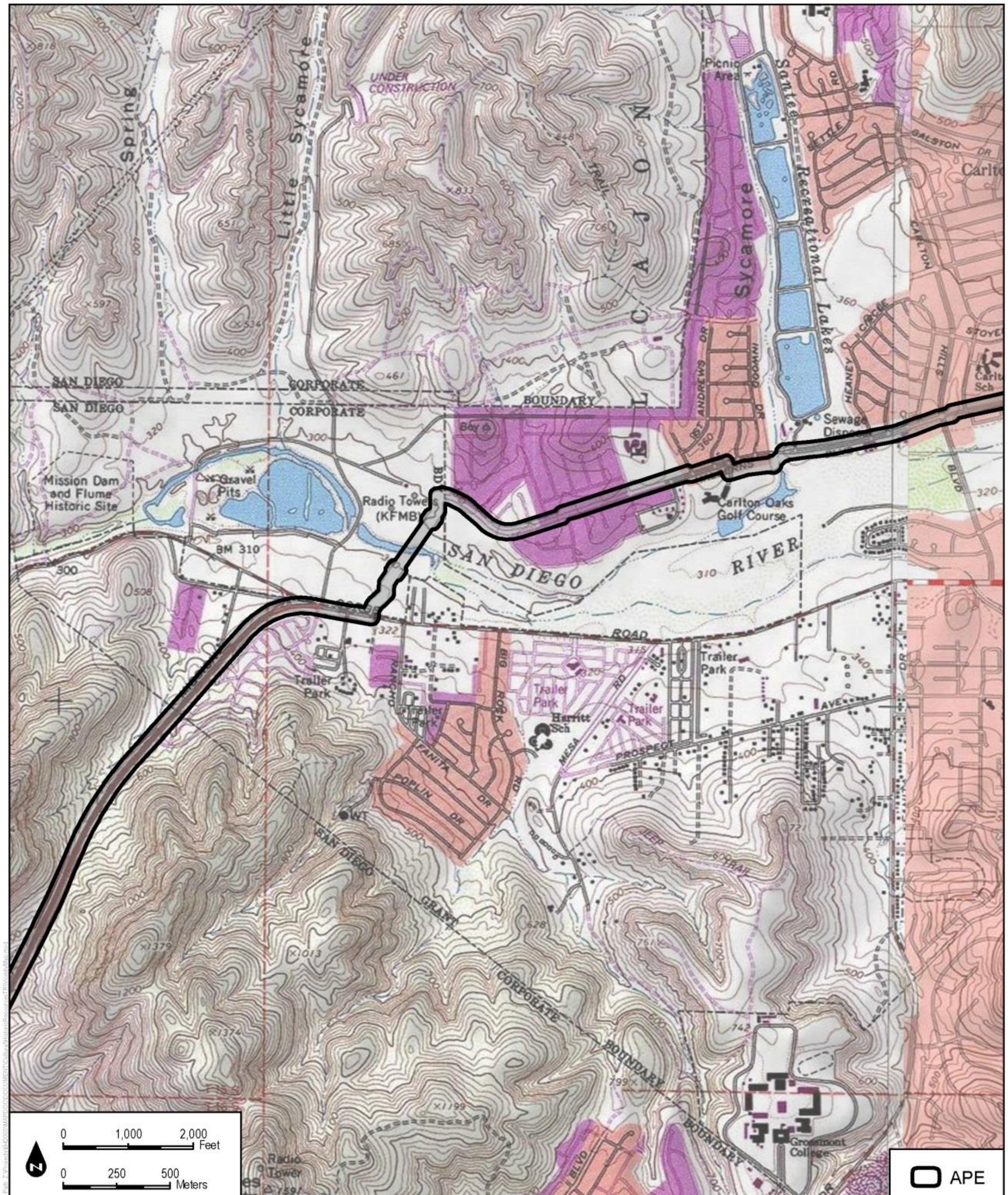

SOURCE: USGS La Meas & El Cajon Quadrangels , 2016

FIGURE 2I
Vicinity Map

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North City Pure Water Project

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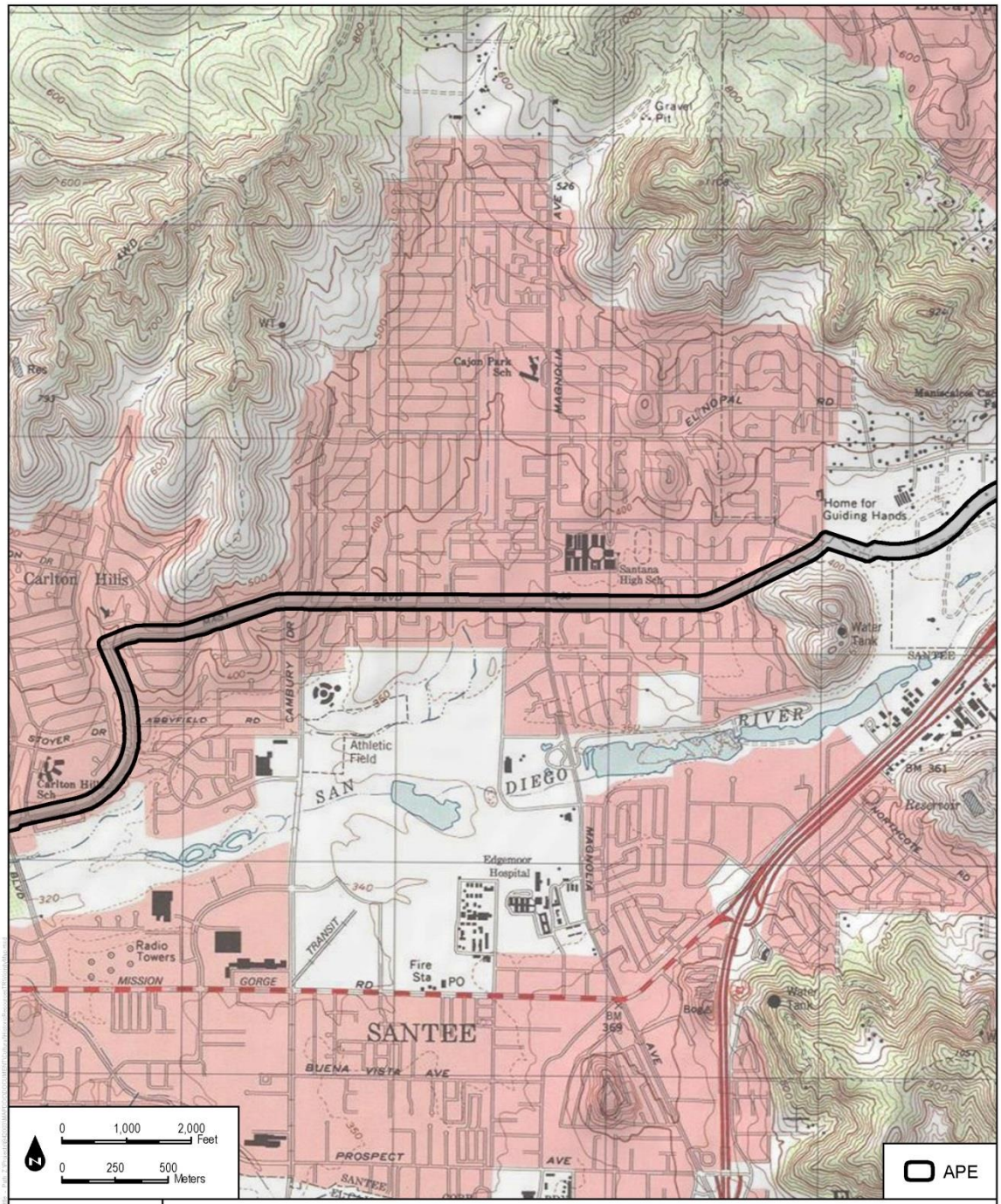

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SOURCE: USGS San Vicente Reservoir & El Cajon Quadrangles , 2016

FIGURE 2J
Vicinity Map

North City Pure Water Project

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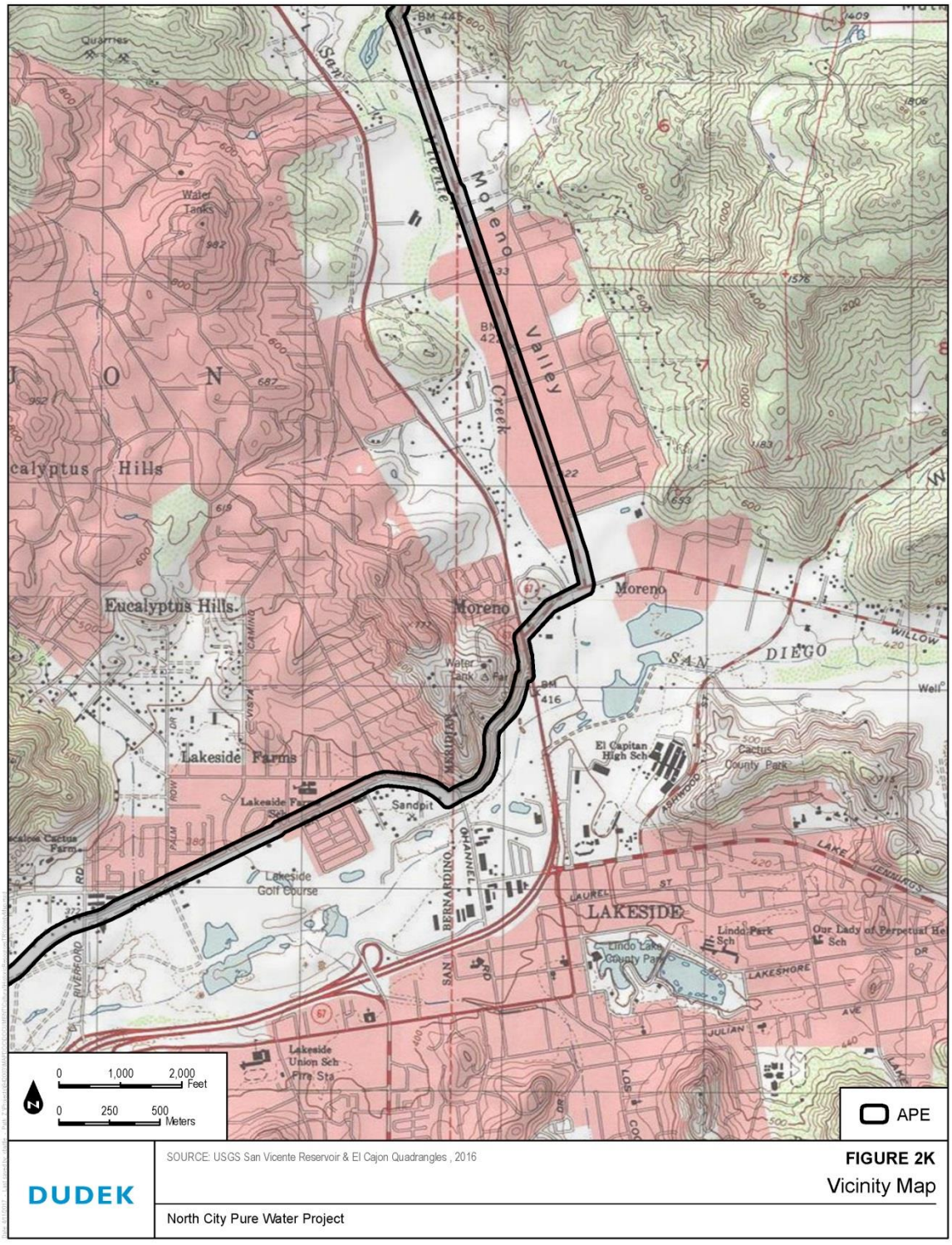
Moreno Valley
Eucalyptus Hills
Lakeside Farms
Moreno
SAN DIEGO
LAKESIDE
El Capitan High Sch
Cactus County Park
Lakeside Golf Course
Lakeside Union Sch
Fire Sta
Lindo Park
Lindo Lake County Park
Our Lady of Perpetual He Sch
Sandpit
Water Tank
Quarries
0 1,000 2,000 Feet
0 250 500 Meters
APE
DUDEK
SOURCE: USGS San Vicente Reservoir & El Cajon Quadrangles , 2016
FIGURE 2K
Vicinity Map
North City Pure Water Project

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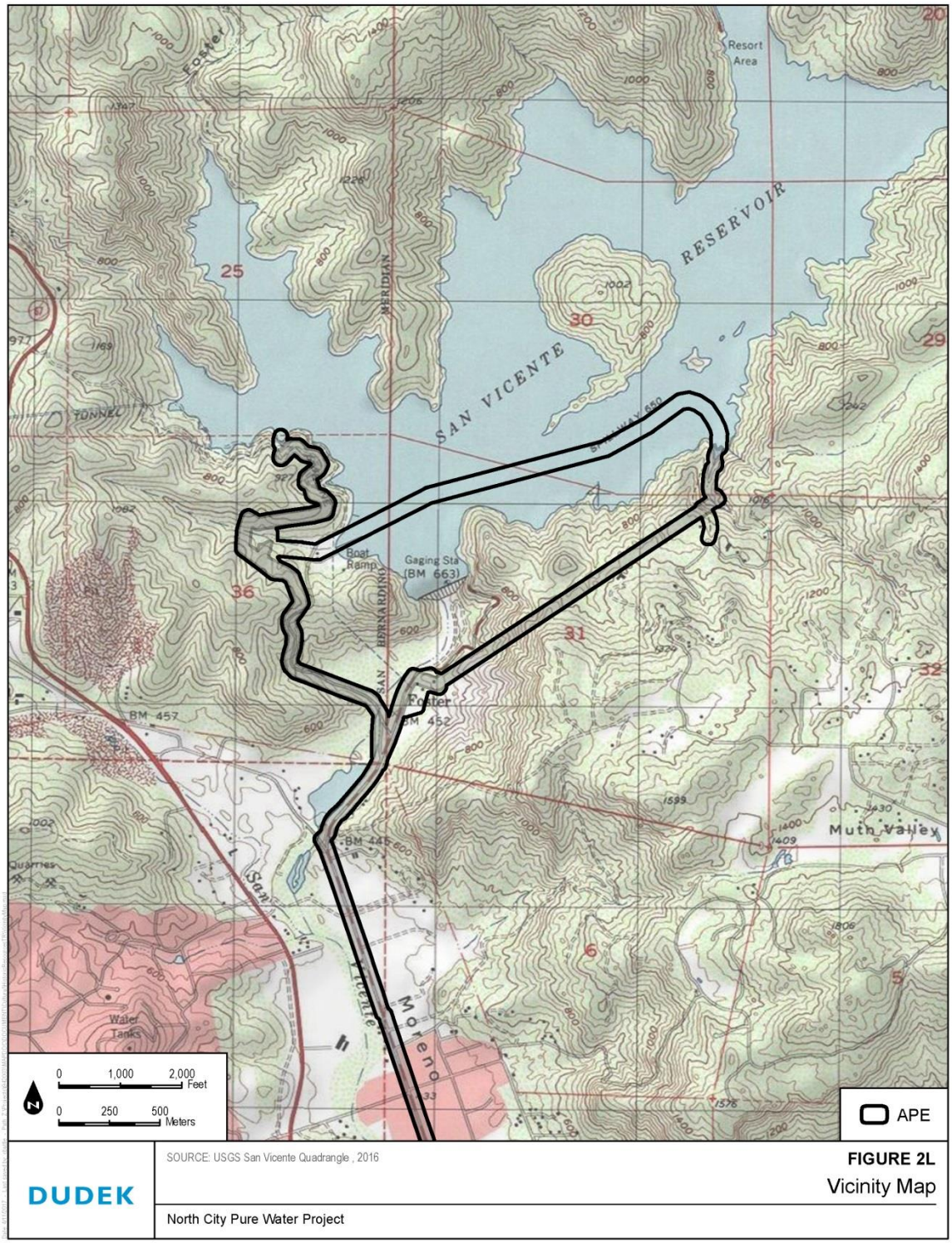
Resort Area
RESERVOIR
SAN VICENTE
Boat Ramp
Gaging Sta (BM 663)
Foster
BM 457
BM 452
BM 445
Muth Valley
Water Tanks
Quarries
Moreno
0 1,000 2,000 Feet
0 250 500 Meters
APE
SOURCE: USGS San Vicente Quadrangle , 2016
DUDEK
FIGURE 2L
Vicinity Map
North City Pure Water Project

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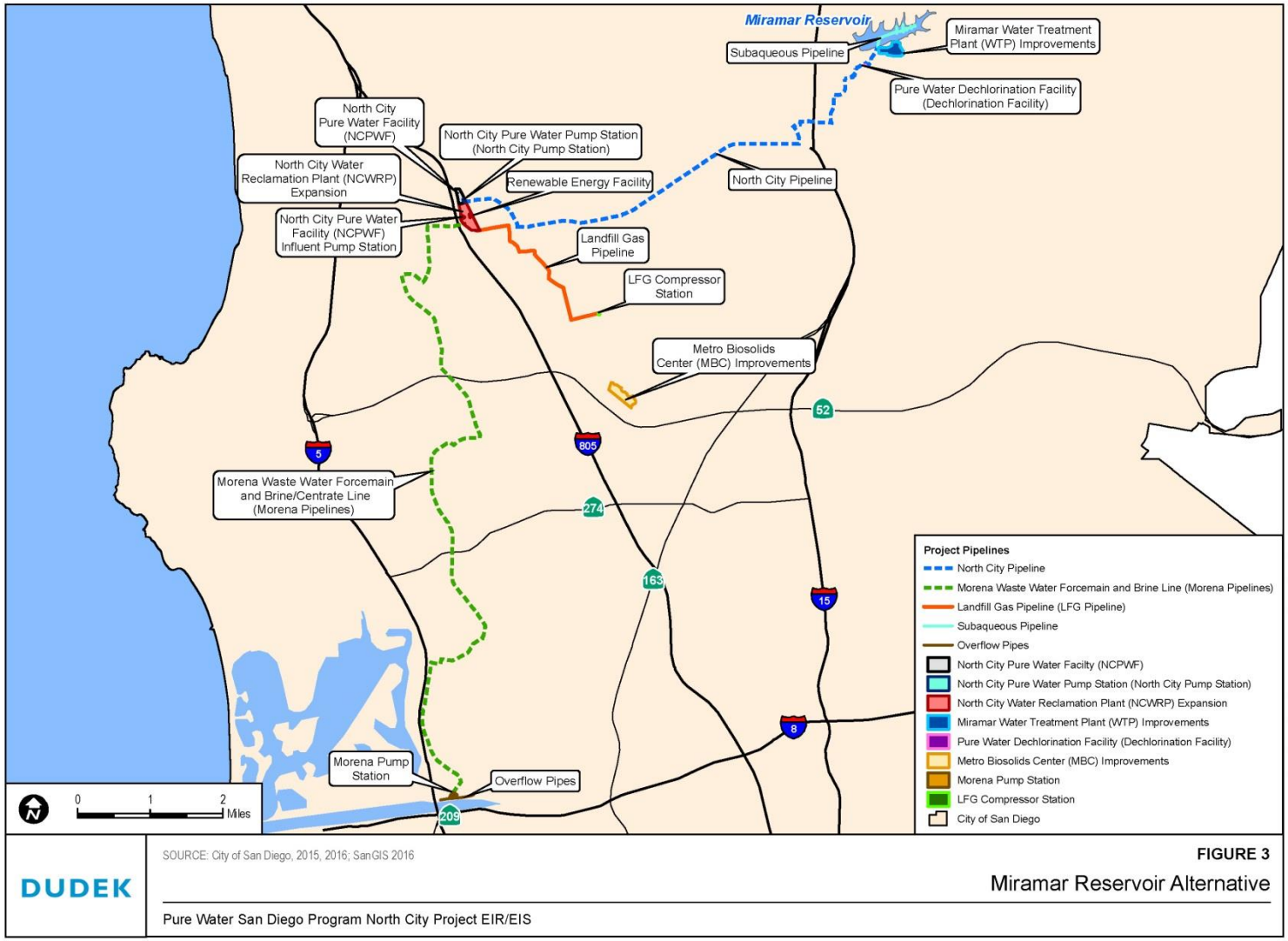
Miramar Reservoir
Miramar Water Treatment Plant (WTP) Improvements
Subaqueous Pipeline
Pure Water Dechlorination Facility (Dechlorination Facility)
North City Pure Water Facility (NCPWF)
North City Pure Water Pump Station (North City Pump Station)
North City Water Reclamation Plant (NCWRP) Expansion
Renewable Energy Facility
North City Pipeline
North City Pure Water Facility (NCPWF) Influent Pump Station
Landfill Gas Pipeline
LFG Compressor Station
Metro Biosolids Center (MBC) Improvements
Morena Waste Water Forcemain and Brine/Centrate Line (Morena Pipelines)
Morena Pump Station
Overflow Pipes
Project Pipelines
North City Pipeline
Morena Waste Water Forcemain and Brine Line (Morena Pipelines)
Landfill Gas Pipeline (LFG Pipeline)
Subaqueous Pipeline
Overflow Pipes
North City Pure Water Facility (NCPWF)
North City Pure Water Pump Station (North City Pump Station)
North City Water Reclamation Plant (NCWRP) Expansion
Miramar Water Treatment Plant (WTP) Improvements
Pure Water Dechlorination Facility (Dechlorination Facility)
Metro Biosolids Center (MBC) Improvements
Morena Pump Station
LFG Compressor Station
City of San Diego
0 1 2 Miles
SOURCE: City of San Diego, 2015, 2016; SanGIS 2016
DUDEK
FIGURE 3
Miramar Reservoir Alternative
Pure Water San Diego Program North City Project EIR/EIS

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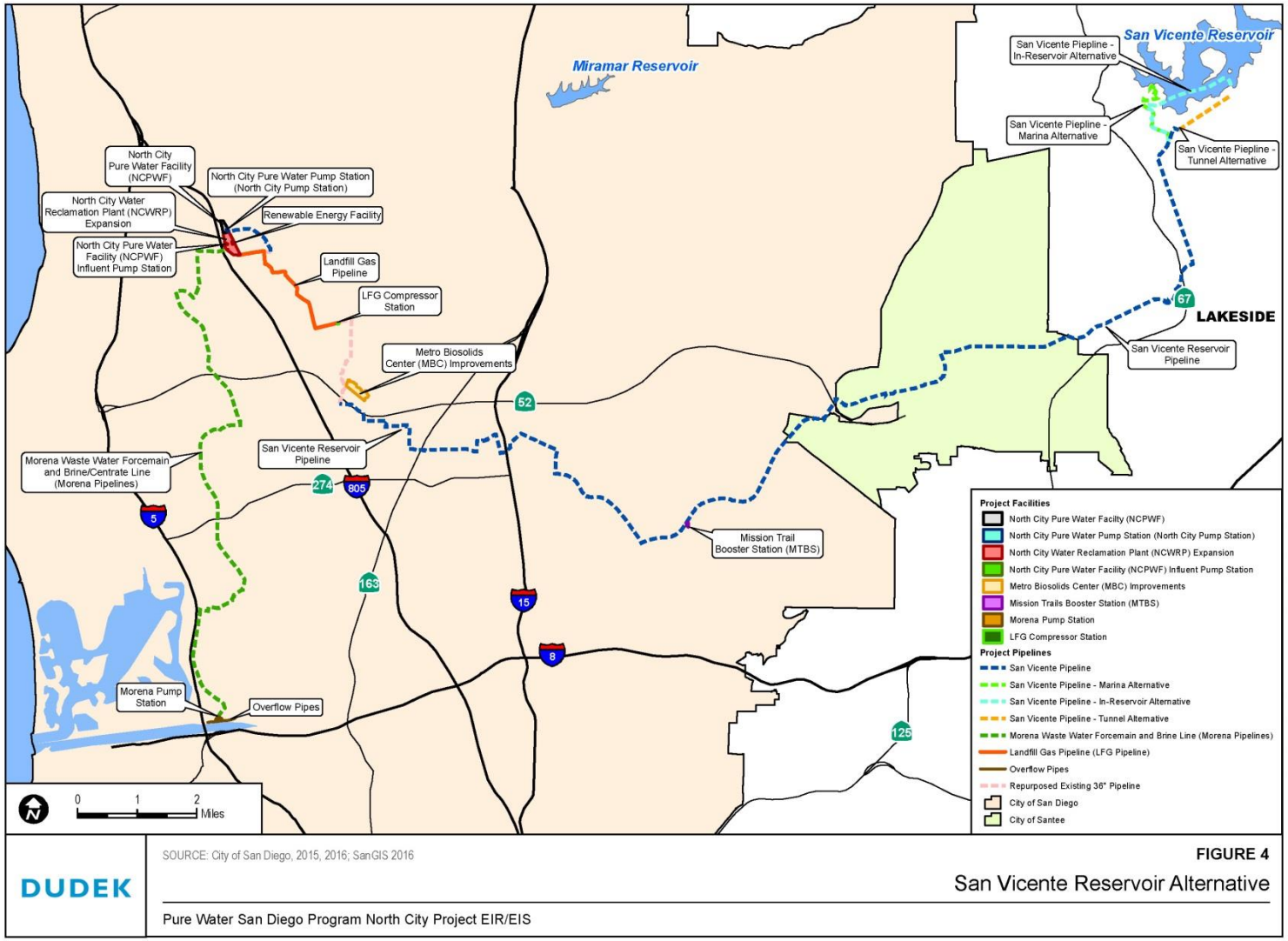
Miramar Reservoir
San Vicente Reservoir
San Vicente Piepline - In-Reservoir Alternative
San Vicente Piepline - Marina Alternative
San Vicente Piepline - Tunnel Alternative
North City Pure Water Facility (NCPWF)
North City Pure Water Pump Station (North City Pump Station)
North City Water Reclamation Plant (NCWRP) Expansion
Renewable Energy Facility
North City Pure Water Facility (NCPWF) Influent Pump Station
Landfill Gas Pipeline
LFG Compressor Station
Metro Biosolids Center (MBC) Improvements
LAKESIDE
San Vicente Reservoir Pipeline
Morena Waste Water Forcemain and Brine/Centrate Line (Morena Pipelines)
Mission Trail Booster Station (MTBS)
Morena Pump Station
Overflow Pipes
0 1 2 Miles
Project Facilities
North City Pure Water Facilty (NCPWF)
North City Pure Water Pump Station (North City Pump Station)
North City Water Reclamation Plant (NCWRP) Expansion
North City Pure Water Facility (NCPWF) Influent Pump Station
Metro Biosolids Center (MBC) Improvements
Mission Trails Booster Station (MTBS)
Morena Pump Station
LFG Compressor Station
Project Pipelines
San Vicente Pipeline
San Vicente Pipeline - Marina Alternative
San Vicente Pipeline - In-Reservoir Alternative
San Vicente Pipeline - Tunnel Alternative
Morena Waste Water Forcemain and Brine Line (Morena Pipelines)
Landfill Gas Pipeline (LFG Pipeline)
Overflow Pipes
Repurposed Existing 36" Pipeline
City of San Diego
City of Santee
SOURCE: City of San Diego, 2015, 2016; SanGIS 2016
DUDEK
FIGURE 4
San Vicente Reservoir Alternative
Pure Water San Diego Program North City Project EIR/EIS

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0 1,000 2,000 Feet
0 250 500 Meters
APE
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SOURCE: USGS 7.5-Minute Series La Jolla Quadrangle
FIGURE 5A
APE Map
DUDEK
North City Pure Water Project

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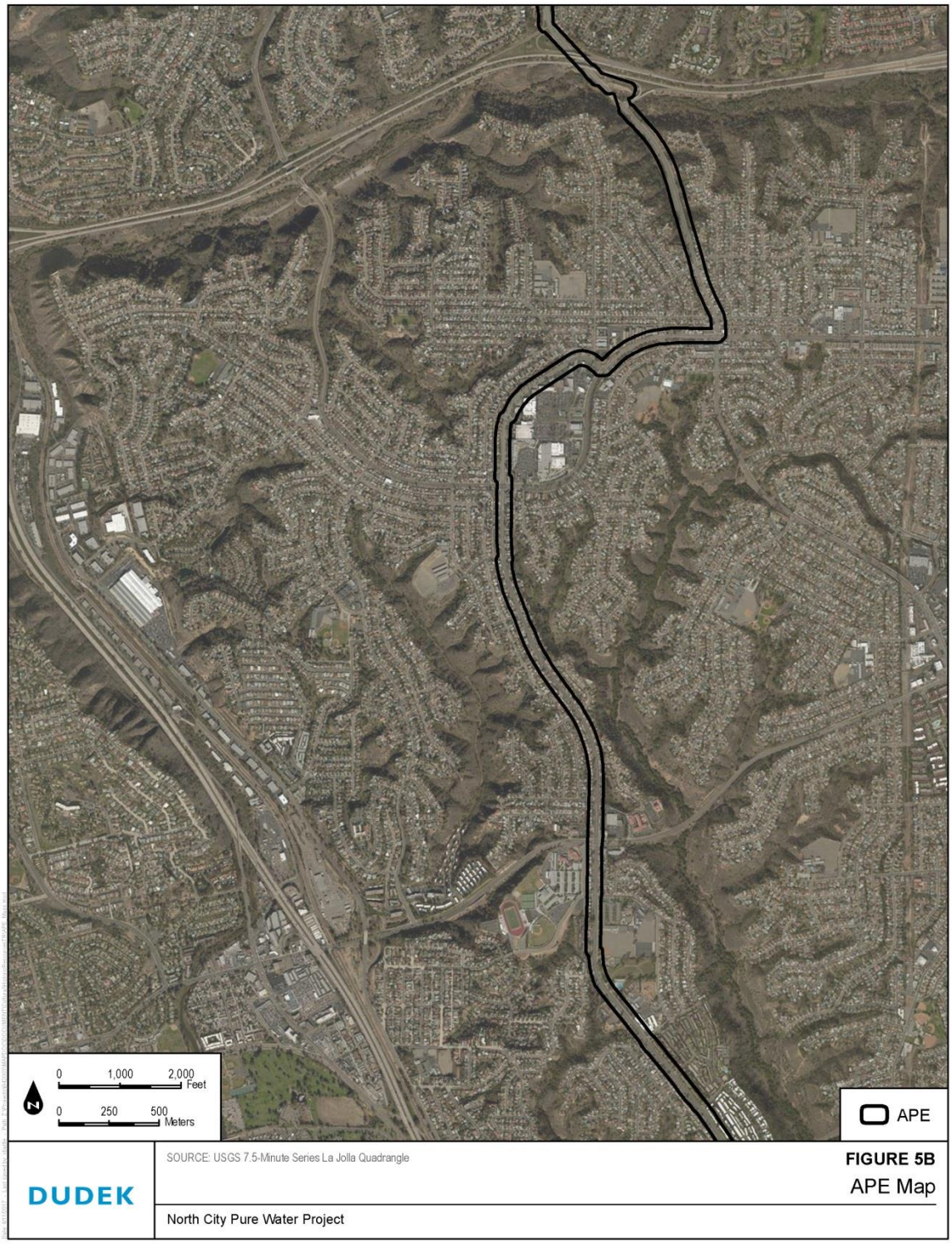
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SOURCE: USGS 7.5-Minute Series La Jolla Quadrangle
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FIGURE 5B
APE Map
North City Pure Water Project

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APE
Restricted Access
SOURCE: USGS 7.5-Minute Series Del Mar & La Jolla Quadrangles
DUDEK
FIGURE 5C
APE Map
North City Pure Water Project

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SOURCE: USGS 7.5-Minute Series Del Mar & La Jolla Quadrangles
DUDEK
FIGURE 5D
APE Map
North City Pure Water Project

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SOURCE: USGS 7.5-Minute Series Poway & Del Mar Quadrangles
FIGURE 5E
APE Map
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North City Pure Water Project

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SOURCE: USGS 7.5-Minute Series La Jolla Quadrangle
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FIGURE 5F
APE Map
North City Pure Water Project

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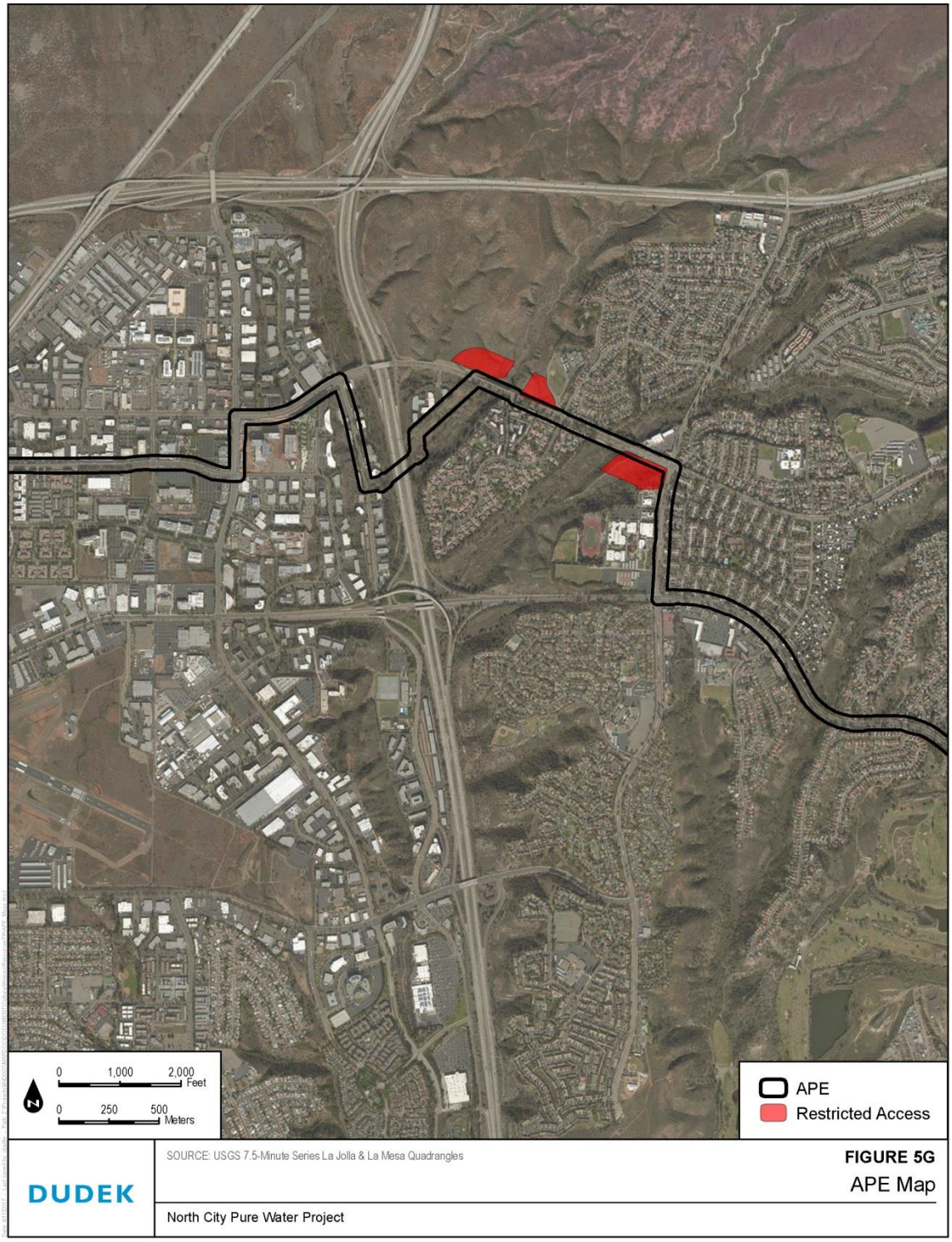
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Restricted Access
SOURCE: USGS 7.5-Minute Series La Jolla & La Mesa Quadrangles
DUDEK
FIGURE 5G
APE Map
North City Pure Water Project

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APE
Restricted Access
SOURCE: USGS 7.5-Minute Series La Mesa Quadrangle
FIGURE 5H
APE Map
DUDEK
North City Pure Water Project

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0 250 500 Meters
APE
Restricted Access
SOURCE: USGS 7.5-Minute Series La Meas & El Cajon Quadrangels
FIGURE 5I
APE Map
DUDEK
North City Pure Water Project

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0 1,000 2,000 Feet
0 250 500 Meters
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Restricted Access
SOURCE: USGS 7.5-Minute Series San Vicente Reservoir & El Cajon Quadrangles
DUDEK
FIGURE 5J
APE Map
North City Pure Water Project

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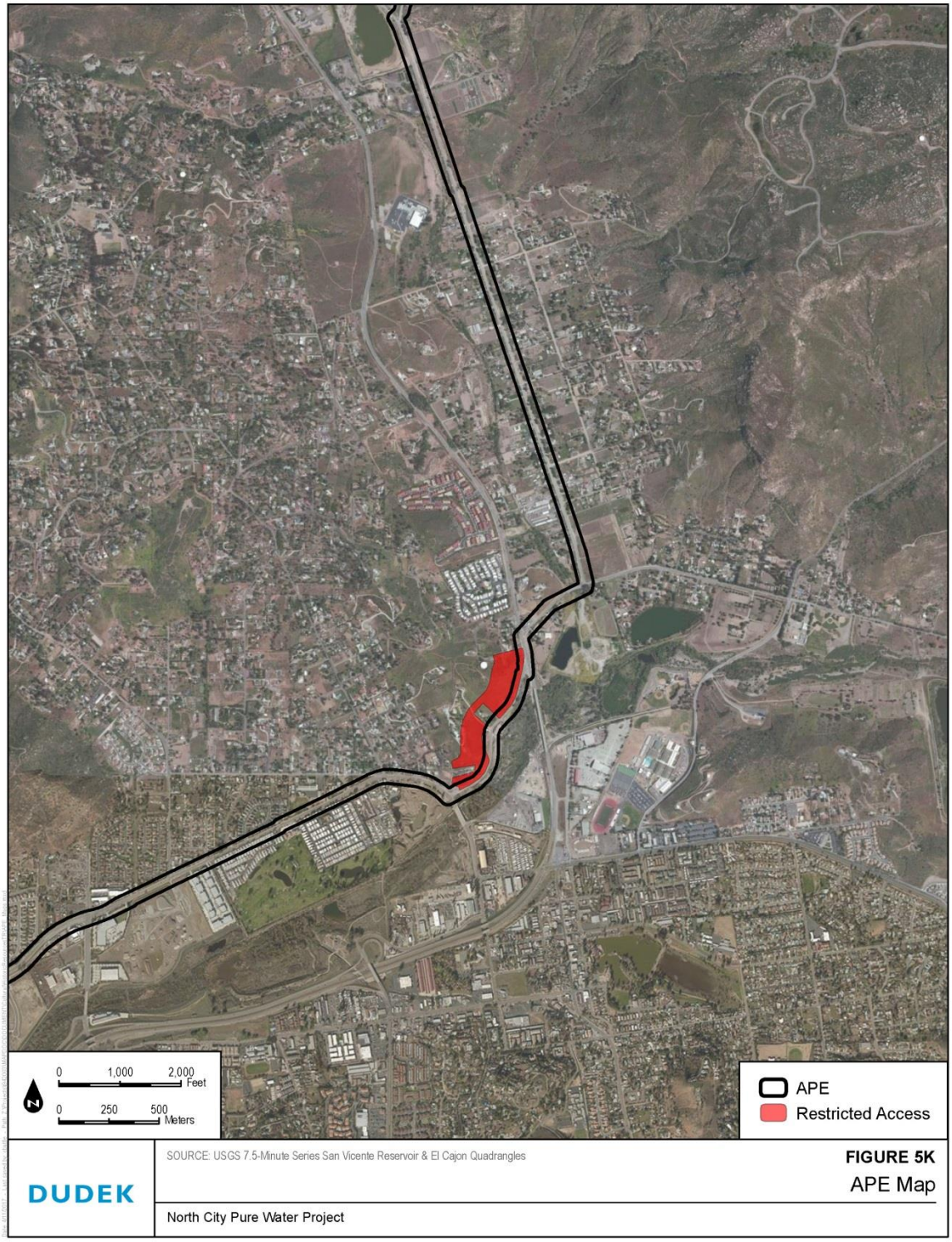
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APE
Restricted Access
SOURCE: USGS 7.5-Minute Series San Vicente Reservoir & El Cajon Quadrangles
DUDEK
FIGURE 5K
APE Map
North City Pure Water Project

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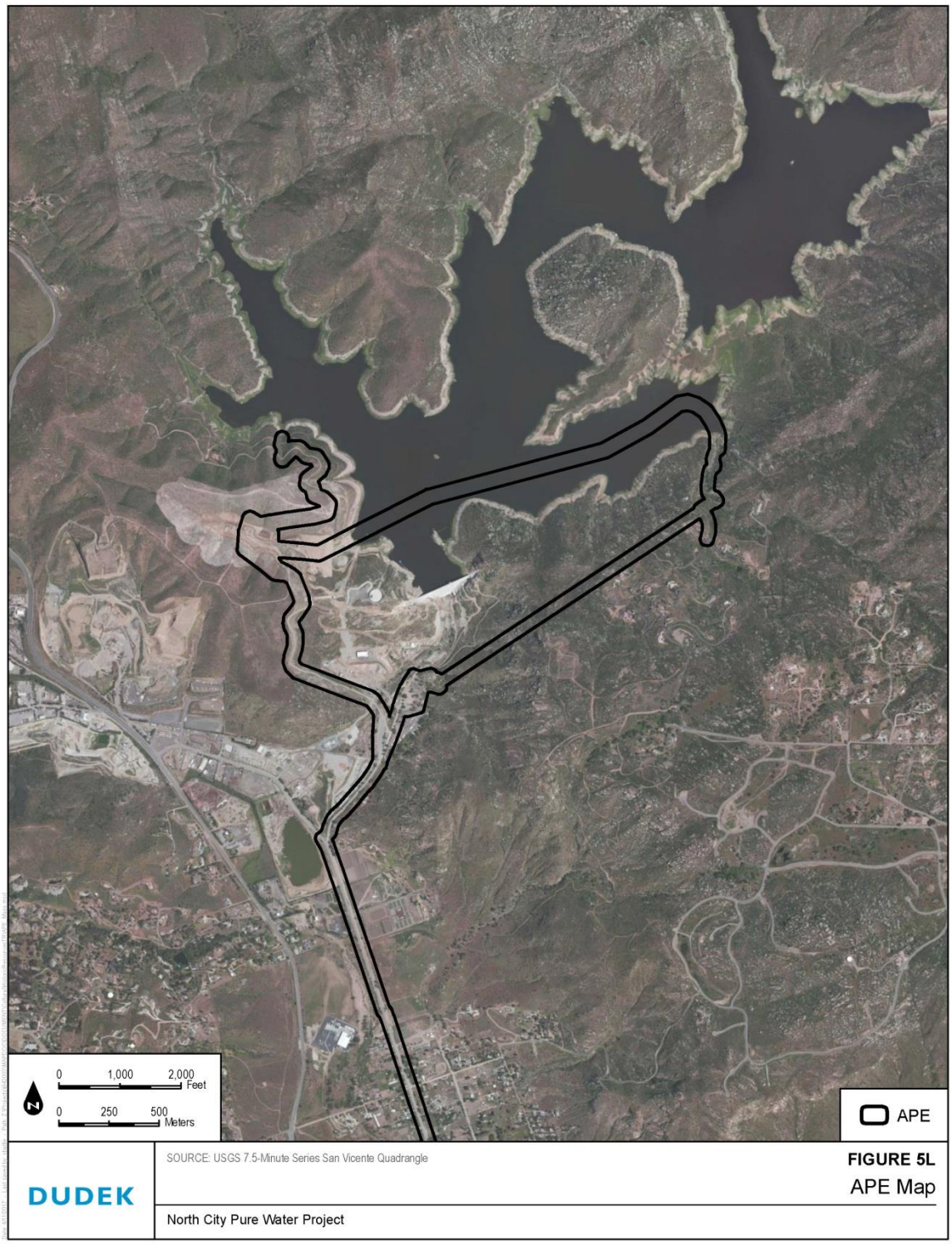
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APE
DUDEK
SOURCE: USGS 7.5-Minute Series San Vicente Quadrangle
FIGURE 5L
APE Map
North City Pure Water Project

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1.1.2 California Register of Historical Resources (California Public Resources Code Section 5020 et seq.)

In California, the term "cultural resource" includes but is not limited to "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code Section 5020.1(j)). In 1992, the California legislature established CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's cultural resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (California Public Resources Code Section 5024.1(a)). A resource is eligible for listing in the CRHR if the State Cultural Resources Commission determines that it is a significant resource and that it meets any of the following NRHP criteria:

1. Associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
2. Associated with the lives of persons important in our past.
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
4. Has yielded, or may be likely to yield, information important in prehistory or history.

(California Public Resources Code Section 5024.1(c).) Resources less than 50 years old are not considered for listing in the CRHR, but may be considered if it can be demonstrated that sufficient time has passed to understand the historical importance of the resource (see 14 CCR, Section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing on the NRHP are automatically listed on the CRHR, as are the state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local cultural resource surveys. The SHPO maintains the CRHR.

1.1.3 Native American Historic Cultural Sites (California Public Resources Code Section 5097 et seq.)

The Native American Historic Resources Protection Act (Public Resources Code Section 5097, et seq.) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to

be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the NRHC to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to 1 year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the CRHR.

1.1.4 California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (California Repatriation Act), enacted in 2001, requires all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

1.1.5 California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are relevant to the analysis of archaeological and historic resources:

1. California Public Resources Code Section 21083.2(g): Defines "unique archaeological resource."
2. California Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5(a): Defines cultural resources. In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change" in the significance of a cultural resource. It also defines the circumstances when a project would materially impair the significance of a cultural resource.
3. California Public Resources Code Section 21074 (a): defines "Tribal cultural resources" and Section 21074(b): defines a "cultural landscape."
4. California Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(e): These statutes set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
5. California Public Resources Code Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4: These statutes and regulations provide information regarding the mitigation framework for archaeological and historic resources, including options of preservation-in-place mitigation measures; identifies preservation-in-place as the preferred manner of mitigating impacts to significant archaeological sites.

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an [sic] cultural resource" (California Public Resources Code Section 21084.1; CEQA Guidelines Section 15064.5(b)). A "cultural resource" is any site listed or eligible for listing in the CRHR. The CRHR listing criteria are intended to examine whether the resource in question: (a) is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; (b) is associated with the lives of persons important in our past; (c) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or (d) has yielded, or may be likely to yield, information important in pre-history or history.

The term "cultural resource" also includes any site described in a local register of historic resources, or identified as significant in a cultural resources survey (meeting the requirements of California Public Resources Code Section 5024.1(q)).

CEQA also applies to "unique archaeological resources." California Public Resources Code Section 21083.2(g) defines a "unique archaeological resource" as any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

In 2014, CEQA was amended through Assembly Bill (AB) 52 to apply to "tribal culture resources" as well. Specifically, California Public Resources Code Section 21074 provides guidance for defining tribal cultural resources as either of the following:

6. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following: (A) Included or determined to be eligible for inclusion in the California Register of Cultural Resources. (B) Included in a local register of cultural resources as defined in subdivision (k) of §5020.1.
7. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of §5024.1. In applying the criteria set forth in subdivision (c)

> of §5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe. (b) A cultural landscape that meets the criteria of subdivision (a) is a tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

All cultural resources and unique archaeological resources – as defined by statute – are presumed to be historically or culturally significant for purposes of CEQA (California Public Resources Code Section 21084.1; 14 CCR 15064.5(a)). The lead agency is not precluded from determining that a resource is a cultural resource even if it does not fall within this presumption (California Public Resources Code Section 21084.1; 14 CCR 15064.5(a)). A site or resource that does not meet the definition of "cultural resource" or "unique archaeological resource" is not considered significant under CEQA and need not be analyzed further (California Public Resources Code Section 21083.2(a); 14 CCR 15064.5(c)(4)).

Under CEQA and significant cultural impact results from a "substantial adverse change in the significance of an [sic] cultural resource [including a unique archaeological resource]" due to the "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an cultural resource would be materially impaired" (14 CCR 15064.5(b)(1); California Public Resources Code Section 5020.1(q)). In turn, the significance of a cultural resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an cultural resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of cultural resources pursuant to Section 5020.1(k) of the Public Resources Code or its identification in an cultural resources survey meeting the requirements of Section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a cultural resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA (14 CCR 15064.5(b)(2)).

Pursuant to these sections, the CEQA first evaluates evaluating whether a project site contains any "cultural resources," then assesses whether that project will cause a substantial adverse

change in the significance of a cultural resource such that the resource's historical significance is materially impaired.

When a project significantly affects a unique archaeological resource, CEQA imposes special mitigation requirements. Specifically:

> [i]f it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:
>
> 1. Planning construction to avoid archaeological sites.
> 2. Deeding archaeological sites into permanent conservation easements.
> 3. Capping or covering archaeological sites with a layer of soil before building on the sites.
> 4. Planning parks, greenspace, or other open space to incorporate archaeological sites (California Public Resources Code, Sections 21083.2(b)(1)–21083.2(b)(4)).

If these "preservation in place" options are not feasible, mitigation may be accomplished through data recovery (California Public Resources Code, Section 21083.2(d); 14 CCR 15126.4(b)(3)(C)). California Public Resources Code Section 21083.2(d) states that:

> [e]xcavation as mitigation shall be restricted to those parts of the unique archaeological resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a unique archaeological resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report.

These same requirements are set forth in slightly greater detail in CEQA Guidelines Section 15126.4(b)(3), as follows:

A. Preservation in place is the preferred manner of mitigating impacts to archaeological sites. Preservation in place maintains the relationship between artifacts and the archaeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

B. Preservation in place may be accomplished by, but is not limited to, the following:

    1. Planning construction to avoid archaeological sites;

2. Incorporation of sites within parks, greenspace, or other open space;
3. Covering the archaeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site[; and]
4. Deeding the site into a permanent conservation easement.

C. When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the cultural resource, shall be prepared and adopted prior to any excavation being undertaken (14 CCR 15126.4(b)(3)).

Note that, when conducting data recovery, "[i]f an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation." (14 CCR 15126.4(b)(3)) However, "[d]ata recovery shall not be required for an cultural resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archaeological or historic resource, provided that determination is documented in the EIR and that the studies are deposited with the California Cultural resources Regional Information Center" (14 CCR 15126.4(b)(3)(D)).

Finally, CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures are set forth in California Public Resources Code Section 5097.98.

1.1.6 California Health and Safety Code Section 7050.5

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. California Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (California Health and Safety Code, Section 7050.5b). If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the Native American Heritage Commission (NAHC) within 24 hours (California Health and Safety Code, Section 7050.5c). The NAHC will notify the Most Likely Descendent (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 24 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

1.1.7 City of San Diego Historic Resource Guidelines

The City of San Diego Cultural Resources Guidelines outlines its purpose as follows:

> To provide property owners, the development community, consultants and the general public with explicit guidelines for the management of cultural resources located within the jurisdiction of the City of San Diego. These guidelines are designed to implement the City's Cultural Resources Regulations contained in the Land Development Code (Chapter 14, Division 3, Article 2) in compliance with the applicable local, state, and federal policies and mandates (City of San Diego 2001).

The City of San Diego Cultural Resources Guidelines observe that "cultural resource" means:

> Site improvements, buildings, structures, historic districts, signs, features (including trees or other landscaping), places, place names, interior elements and fixtures designated in conjunction with a property, or other objects of historical, archaeological, scientific, educational, cultural, architectural, aesthetic, or traditional significance to citizens of the city. They include buildings, structures, objects, archaeological sites, districts, or landscapes possessing physical evidence of human activities that are typically over 45 years old, regardless of whether they have been altered or continue to be used (City of San Diego 2001).

The purpose and intent of the Cultural Resources Regulation of the Land Development Code (Chapter 14, Division 3, Article 2) is outlined as follows:

> To protect, preserve and, where, damaged, restore the cultural resources of San Diego. The regulations apply to all development within the City of San Diego when cultural resources are present within the premises regardless of the requirement to obtain Neighborhood Development Permit or Site Development Permit (City of San Diego 2001).

The City of San Diego General Plan Program Environmental Impact Report (PEIR) states the following:

> The Cultural Resources Regulations require that designated cultural resources and traditional cultural properties be preserved unless deviation findings can be made by the decision maker as part of a discretionary permit. Minor alterations consistent with the U.S. Secretary of the Interior's Standards are exempt from the requirement to obtain a separate permit but must comply with the regulations and associated cultural resources guidelines. Limited development may encroach into

important archaeological sites if adequate mitigation measures are provided as a condition of approval.

Cultural Resources Guidelines, located in the Land Development Manual, provide property owners, the development community, consultants and the general public explicit guidance for the management of cultural resources located within the City's jurisdiction. These guidelines are designed to implement the cultural resources regulations and guide the development review process from the need for a survey and how impacts are assessed to available mitigation strategies and report requirements and include appropriate methodologies for treating cultural resources located in the City.

In order to assess the significance of the Pure Water Program's effects on cultural resources, the City of San Diego's Scoping Letter for the Program (City of San Diego 2014), as well as the City's Significance Determination Thresholds (City of San Diego 2011), identify the following thresholds:

- Result in the alteration or destruction of a prehistoric or historic archaeological site, or adverse physical or aesthetic effects to a prehistoric building, structure, object, or site.
- Result in any impact to existing religious or sacred uses or result in the disturbance of any human remains within the potential impact area.

In general, the City's cultural resources regulations build on federal and state cultural resources laws and guidelines in an attempt to streamline the process of considering impacts to cultural resources within the City's jurisdiction, while maintaining that some resources not significant under federal or state law may be considered historical under the City's guidelines. In order to apply the criteria and determine the significance of potential project impacts to a cultural resource, the APE of the project must be defined for both direct impacts and indirect impacts. Indirect impacts can include increased public access to an archaeological site, or visual impairment of a historically significant view shed related to a historic building or structure.

1.2 Project Personnel

Micah Hale, PhD, RPA, served as project manager and Principal Investigator, and co-authored the technical report. Matthew DeCarlo, BA, served as field director and co-authored the technical report. Kara Dotter, MHP, conducted architectural history surveys and documentation, and Brad Comeau, MSc, RPA, served as contributing author. Victor Herrera and Jason Collins served as field crew members (Appendix A). Justin Linton, Gabe Kitchen, and Tuchon Phoenix of Red Tail Monitoring and Research Inc. participated in the survey and evaluations as Native American monitors.

1.3 Report Structure

Following this introduction, a cultural and environmental context is provided for characterizing cultural resources. Next, inventory, excavation, and laboratory methods are reviewed. A description of the survey and excavation results follows. An analysis of excavated materials is then presented followed by evaluation recommendations and management considerations. Two sets of appendices (confidential and non-confidential) are attached. The non-confidential appendices include Appendix A: Project Personnel Qualifications; Appendix C: NAHC Sacred Lands File Search and Tribal Correspondence; and Appendix F: Artifact Catalog. The confidential appendices include Appendix B: Records Search Documents; Appendix D: New DPR Site Records and Updates; and Appendix E: Resources in APE Location Maps.

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2 SETTING

2.1 Natural Setting

The North City Project extends from its southwestern boundary at the Morena Pump Station near the outlet of the San Diego River to its northeastern boundary at the San Vicente Reservoir. The elevation of the project ranges from approximately 14 feet above mean sea level at the Morena Pump Station to 1,080 feet above mean sea level at the San Vicente Reservoir (Dudek 2017). Topography of the project ranges greatly, from generally flat mesa terraces that support the NCWRP, to steep canyons and mountainous terrain surrounding San Vicente Reservoir. Large segments of the project are planned within existing developed areas and paved roads, but some segments traverse undeveloped habitats with native habitat communities (Dudek 2017).

For detailed discussion relating to the environmental context of this area, please consult the biological, geological, and other technical studies prepared for North City Project.

2.2 Cultural Setting

Evidence for continuous human occupation in the San Diego region spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad time frame have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. Each of these reconstructions describes essentially similar trends in assemblage composition in more or less detail. This research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC.–AD 500), Late Prehistoric (AD 500–1769), and Ethnohistoric (post-AD 1769).

2.2.1 Paleoindian (pre-5500 BC)

Evidence for Paleoindian occupation in coastal Southern California is tenuous, especially considering the fact that the oldest dated archaeological assemblages look nothing like the Paleoindian artifacts from the Great Basin. One of the earliest dated archaeological assemblages in coastal Southern California (excluding the Channel Islands) derives from SDI-4669/W-12, in La Jolla. A human burial from SDI-4669 was radiocarbon dated to 9,590–9,920 years before present (95.4% probability) (Hector 2007). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of groundstone, battered cobbles, and expedient flake tools). In contrast, typical Paleoindian assemblages include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of groundstone tools. Prime examples of this pattern are sites that were studied

by Emma Lou Davis (1978) on China Lake Naval Air Weapons Station near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multicomponent fluted point site, and MNO-680—a single component Great Basined Stemmed point site (Basgall et al. 2002). At MNO-679 and MNO-680, groundstone tools were rare while finely made projectile points were common.

Turning back to coastal Southern California, the fact that some of the earliest dated assemblages are dominated by processing tools runs counter to traditional notions of mobile hunter–gatherers traversing the landscape for highly valued prey. Evidence for the latter—that is, typical Paleoindian assemblages—may have been located along the coastal margin at one time, prior to glacial desiccation and a rapid rise in sea level during the early Holocene (pre-7500 BP) that submerged as much as 1.8 km of the San Diego coastline. If this were true, however, it would also be expected that such sites would be located on older landforms near the current coastline. Some sites, such as SDI-210 along Agua Hedionda Lagoon, contained stemmed points similar in form to Silver Lake and Lake Mojave projectile points (pre-8000 BP) that are commonly found at sites in California's high desert (Basgall and Hall 1990). SDI-210 yielded one corrected radiocarbon date of 8520–9520 BP (Warren et al. 2004). However, sites of this nature are extremely rare and cannot be separated from large numbers of milling tools that intermingle with old projectile point forms.

Warren et al. (2004) claimed that a biface manufacturing tradition present at the Harris site complex (SDI-149) is representative of typical Paleoindian occupation in the San Diego region that possibly dates between 10,365 and 8200 BC (Warren et al. 2004, p. 26). Termed San Dieguito (Rogers 1945), assemblages at the Harris site are qualitatively distinct from most others in the San Diego region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of processing tools (Warren 1964, 1968). Despite the unique assemblage composition, the definition of San Dieguito as a separate cultural tradition is hotly debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos' interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents. In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (i.e., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, is very different than nearly all other assemblages throughout the San Diego region, regardless of age. Warren et al. (2004) made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture. Such a strategy contrasts with the expedient flake-based tools and

cobble-core reduction strategy that typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not only short-lived, but that it was not as economically successful as the Archaic strategy. Such a conclusion would fit with other trends in southern California deserts, wherein hunting-related tools are replaced by processing tools during the early Holocene (Basgall and Hall 1993).

2.2.2 Archaic (8000 BC–AD 500)

The more than 1500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in the San Diego region. If San Dieguito is the only recognized Paleoindian component in the San Diego region, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. (2004) admitted as much, citing strong desert connections with San Dieguito. Thus, the Archaic pattern is the earliest local socioeconomic adaptation in the San Diego region (Hale 2001, 2009).

The Archaic pattern is relatively easy to define with assemblages that consist primarily of processing tools: millingstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the San Diego region, with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurs until the bow and arrow is adopted at around AD 500, as well as ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remains low. After the bow is adopted, small arrow points appear in large quantities and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped millingstones and handstones decrease in proportion relative to expedient, unshaped groundstone tools (Hale 2009). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complimented only by the addition of the bow and ceramics.

2.2.3 Late Prehistoric (AD 500–1769)

The period of time following the Archaic and prior to Ethnohistoric times (AD 1769) is commonly referred to as the Late Prehistoric (M. Rogers 1945; Wallace 1955; Warren et al.

2004). However, several other subdivisions continue to be used to describe various shifts in assemblage composition, including the addition of ceramics and cremation practices. In northern San Diego County, the post-AD 1450 period is called the San Luis Rey Complex (True 1980), while the same period in southern San Diego County is called the Cuyamaca Complex and is thought to extend from AD 500 until Ethnohistoric times (Meighan 1959). Rogers (1929) also subdivided the last 1,000 years into the Yuman II and III cultures, based on the distribution of ceramics. Despite these regional complexes, each is defined by the addition of arrow points and ceramics, and the widespread use of bedrock mortars. Vagaries in the appearance of the bow and arrow and ceramics make the temporal resolution of the San Luis Rey and Cuyamaca complexes difficult. For this reason, the term Late Prehistoric is well-suited to describe the last 1,500 years of prehistory in the San Diego region.

Temporal trends in socioeconomic adaptations during the Late Prehistoric period are poorly understood. This is partly due to the fact that the fundamental Late Prehistoric assemblage is very similar to the Archaic pattern, but includes arrow points and large quantities of fine debitage from producing arrow points, ceramics, and cremations. The appearance of mortars and pestles is difficult to place in time because most mortars are on bedrock surfaces; bowl mortars are actually rare in the San Diego region. Some argue that the Ethnohistoric intensive acorn economy extends as far back as AD 500 (Bean and Shipek 1978). However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred prior to AD 1400. True (1980) argued that acorn processing and ceramic use in the northern San Diego region did not occur until the San Luis Rey pattern emerged after approximately AD 1450. For southern San Diego County, the picture is less clear. The Cuyamaca Complex is the southern counterpart to the San Luis Rey pattern, however, and is most recognizable after AD 1450 (Hector 1984). Similar to True (1980), Hale (2009) argued that an acorn economy did not appear in the southern San Diego region until just prior to Ethnohistoric times, and that when it did occur, a major shift in social organization followed.

2.2.4 Ethnohistoric (post-AD 1769)

The history of the Native American communities prior to the mid-1700s has largely been reconstructed through later mission-period and early ethnographic accounts. The first records of the Native American inhabitants of the San Diego region come predominantly from European merchants, missionaries, military personnel, and explorers. These brief, and generally peripheral, accounts were prepared with the intent of furthering respective colonial and economic aims and were combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the San Diego region brought more extensive documentation of Native American communities, though these groups did not become the focus of formal and in-depth ethnographic study until the early twentieth century (Boscana

1846; Fages 1937; Geiger and Meighan 1976; Harrington 1934; Laylander 2000). The principal intent of these researchers was to record the precontact, culturally specific practices, ideologies, and languages that had survived the destabilizing effects of missionization and colonialism. This research, often understood as "salvage ethnography," was driven by the understanding that traditional knowledge was being lost due to the impacts of modernization and cultural assimilation. Alfred Kroeber applied his "memory culture" approach (Lightfoot 2005, p. 32) by recording languages and oral histories within the San Diego region. Kroeber's 1925 assessment of the impacts of Spanish missionization on local Native American populations supported Kumeyaay traditional cultural continuity:

> San Diego was the first mission founded in upper California; but the geographical limits of its influence were the narrowest of any, and its effects on the natives comparatively light. There seem to be two reasons for this: first, the stubbornly resisting temper of the natives; and second, a failure of the rigorous concentration policy enforced elsewhere (Kroeber 1925, p. 711).

In some ways this interpretation led to the belief that many California Native American groups simply escaped the harmful effects of contact and colonization all together. This, of course, is untrue. Ethnographic research by Dubois, Kroeber, Harrington, Spier, and others during the early twentieth century seemed to indicate that traditional cultural practices and beliefs survived among local Native American communities. These accounts supported, and were supported by, previous governmental decisions which made San Diego County the location of more federally recognized tribes than anywhere else in the United States: 18 tribes on 18 reservations that cover more than 116,000 acres (CSP 2009).

The traditional cultural boundaries between the Luiseño and Kumeyaay Native American tribal groups have been well defined by anthropologist Florence C. Shipek:

> In 1769, the Kumeyaay national territory started at the coast about 100 miles south of the Mexican border (below Santo Tomas), thence north to the coast at the drainage divide south of the San Luis Rey River including its tributaries. Using the U.S. Geological Survey topographic maps, the boundary with the Luiseño then follows that divide inland. The boundary continues on the divide separating Valley Center from Escondido and then up along Bear Ridge to the 2240 contour line and then north across the divide between Valley Center and Woods Valley up to the 1880-foot peak, then curving around east along the divide above Woods Valley (Shipek 1993, as summarized in County of San Diego 2007, p. 6).

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish

contact (Johnson and Lorenz 2006, p. 34). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six primary language families (Golla 2007, p. 71). Based on the project location, the Native American inhabitants of the region would have likely spoken both the Ipai and Tipai language subgroup of the Yuman language group. Ipai and Tipai, spoken respectively by the northern and southern Kumeyaay communities, are mutually intelligible. For this reason, these two are often treated as dialects of a larger Kumeyaay tribal group rather than as distinctive languages, though this has been debated (Luomala 1978; Laylander 2010).

Victor Golla has contended that one can interpret the amount of variability within specific language groups as being associated with the relative "time depth" of the speaking populations (Golla 2007, p. 80) A large amount of variation within the language of a group represents a greater time depth then a group's language with less internal diversity. One method that he has employed is by drawing comparisons with historically documented changes in Germanic and Romantic language groups. Golla has observed that the "absolute chronology of the internal diversification within a language family" can be correlated with archaeological dates (Golla 2007, p. 71). This type of interpretation is modeled on concepts of genetic drift and gene flows that are associated with migration and population isolation in the biological sciences.

Golla suggested that there are two language families associated with Native American groups who traditionally lived throughout the San Diego County region. The northern San Diego tribes have traditionally spoken Takic languages that may be assigned to the larger Uto–Aztecan family (Golla 2007, p. 74). These groups include the Luiseño, Cupeño, and Cahuilla. Golla has interpreted the amount of internal diversity within these language-speaking communities to reflect a time depth of approximately 2,000 years. Other researchers have contended that Takic may have diverged from Uto–Aztecan ca. 2600 BC–AD 1, which was later followed by the diversification within the Takic speaking San Diego tribes, occurring approximately 1500 BC–AD 1000 (Laylander 2010). The majority of Native American tribal groups in southern San Diego region have traditionally spoken Yuman languages, a subgroup of the Hokan Phylum. Golla has suggested that the time depth of Hokan is approximately 8,000 years (Golla 2007, p. 74). The Kumeyaay tribal communities share a common language group with the Cocopa, Quechan, Maricopa, Mojave, and others to east, and the Kiliwa to the south. The time depth for both the Ipai (north of the San Diego River, from Escondido to Lake Henshaw) and the Tipai (south of the San Diego River, the Laguna Mountains through Ensenada) is approximated to be 2,000 years at the most. Laylander has contended that previous research indicates a divergence between Ipai and Tipai to have occurred approximately AD 600–1200 (Laylander 1985). Despite the distinct linguistic differences between the Takic-speaking tribes to the north, the Ipai-speaking communities in central San Diego, and the Tipai southern Kumeyaay, attempts to illustrate the distinctions between these groups based solely on cultural material alone have had only limited success (Pigniolo 2004; True 1966).

The Kumeyaay generally lived in smaller family subgroups that would inhabit two or more locations over the course of the year. While less common, there is sufficient evidence that there were also permanently occupied villages, and that some members may have remained at these locations throughout the year (Owen 1965; Shipek 1982; Shipek 1985; Spier 1923). Each autonomous triblet was internally socially stratified, commonly including higher status individuals such as a tribal head (Kwaaypay), shaman (Kuseyaay), and general members with various responsibilities and skills (Shipek 1982). Higher-status individuals tended to have greater rights to land resources, and owned more goods, such as shell money and beads, decorative items, and clothing. To some degree, titles were passed along family lines; however, tangible goods were generally ceremonially burned or destroyed following the deaths of their owners (Luomala 1978). Remains were cremated over a pyre and then relocated to a cremation ceramic vessel that was placed in a removed or hidden location. A broken metate was commonly placed at the location of the cremated remains, with the intent of providing aid and further use after death. At maturity, tribal members often left to other bands in order to find a partner. The families formed networks of communication and exchange around such partnerships.

Areas or regions, identified by known physical landmarks, could be recognized as band-specific territories that might be violently defended against use by other members of the Kumeyaay. Other areas or resources, such as water sources and other locations that were rich in natural resources, were generally understood as communal land to be shared amongst all the Kumeyaay (Luomala 1978). The coastal Kumeyaay exchanged a number of local goods, such as seafood, coastal plants, and various types of shell for items including acorns, agave, mesquite beans, gourds, and other more interior plants of use (Luomala 1978). Shellfish would have been procured from three primary environments, including the sandy open coast, bay and lagoon, and rocky open coast. The availability of these marine resources changed with the rising sea levels, siltation of lagoon and bay environments, changing climatic conditions, and intensity of use by humans and animals (Gallegos and Kyle 1988; Pigniolo 2005; Warren 1964). Shellfish from sandy environments included *Donax*, *Saxidomus*, *Tivela*, and others. Rocky coast shellfish dietary contributions consisted of *Pseudochama*, *Megastraea*, *Saxidomus*, *Protothaca*, *Megathura*, *Mytilus*, and others. Lastly, the bay environment would have provided *Argopecten*, *Chione*, *Ostrea*, *Neverita*, *Macoma*, *Tagelus*, and others. Although marine resources were obviously consumed, terrestrial animals and other resources likely provided a large portion of sustenance. Game animals consisted of rabbits, hares (Leporidae), birds, ground squirrels, woodrats (*Neotoma* sp.), deer, bears, mountain lions (*Puma concolor*), bobcats (*Lynx rufus*), coyotes (*Canis latrans*), and others. In lesser numbers, reptiles and amphibians may have been consumed.

A number of local plants were used for food and medicine. These were exploited seasonally, and were both traded between regional groups and gathered as a single triblet moved between habitation areas. Some of the more common of these that might have been procured locally or as

higher elevation varieties would have included buckwheat (*Eriogonum fasciculatum*), *Agave*, *Yucca*, lemonade sumac (*Rhus integrifolia*), sugarbush (*Rhus ovata*), sage scrub (*Artemisia californica*), yerba santa (*Eriodictyon* sp.), sage (*Salvia* sp.), *Ephedra*, prickly pear (*Opuntia* sp.), mulefat (*Baccharis salicifolia*), chamise (*Adenostoma fasciculatum*), elderberry (*Sambucus nigra*), oak (*Quercus* sp.), willow (*Salix* sp.), and *Juncus* grass among many others (Wilken 2012).

2.2.5 Historic Period (post-AD 1542)

San Diego history can be divided into the Spanish Period (1769–1821), Mexican Period (1821–1846) and American Period (1846–Present). European activity in the region began as early as AD 1542, when Juan Rodríguez Cabrillo landed in San Diego Bay. Sebastián Vizcaíno returned in 1602, and it is possible that there were subsequent contacts that went unrecorded. These brief encounters made the local native people aware of the existence of other cultures that were technologically more complex than their own. Epidemic diseases may also have been introduced into the region at an early date, either by direct contacts with the infrequent European visitors or through waves of diffusion emanating from native peoples farther to the east or south (Preston 2002). It is possible, but as yet unproven, that the precipitous demographic decline of native peoples had already begun prior to the arrival of Gaspar de Portolá and Junípero Serra in 1769.

The Spanish colonization of Alta California began in 1769 with the founding of Mission San Diego de Alcalá by Father Junípero Serra. Concerns over Russian and English interests in California motivated the Spanish government to send an expedition of soldiers, settlers and missionaries to occupy and secure the northwestern borderlands of New Spain through the establishment of a Presidio, Mission, and Pueblo. The Spanish explorers first camped on the shore of the bay in the area that is now downtown San Diego. Lack of water at this location, however, led to moving the camp on May 14, 1769, to a small hill closer to the San Diego River and near the Kumeyaay village of Cosoy. Father Junípero Serra arrived in July of the same year to find the Presidio serving mostly as a hospital. The Spanish built a primitive mission and presidio structure on the hill near the river.

Bad feelings soon developed between the native Kumeyaay and the soldiers, resulting in construction of a stockade which, by 1772, included barracks for the soldiers, a storehouse for supplies, a house for the missionaries and the chapel, which had been improved. The log and brush huts were gradually replaced with buildings made of adobe bricks. Flat earthen roofs were eventually replaced by pitched roofs with rounded roof tiles. Clay floors were eventually lined with fired brick.

In August, 1774 the Spanish missionaries moved the Mission San Diego de Alcalá to its present location 6 miles up the San Diego River valley (modern Mission Valley) near the Kumeyaay village of Nipaguay. Begun as a thatched chapel and compound built of willow poles, logs and tules, the new Mission was sacked and burned in the Kumeyaay uprising of November 5, 1775.

The first adobe chapel was completed in October 1776 and the present church was begun the following year. A succession of building programs through 1813 resulted in the final rectilinear plan that included the church, bell tower, sacristy, courtyard, residential complex, workshops, corrals, gardens and cemetery. Orchards, reservoirs and other agricultural installations were built to the south on the lower San Diego River alluvial terrace and were irrigated by a dam and aqueduct system. The initial Spanish occupation and mission system brought about profound changes in the lives of the Kumeyaay people. Substantial numbers of the coastal Kumeyaay were forcibly brought into the mission or died from introduced diseases.

As early as 1791, presidio commandants in California were given the authority to grant small house lots and garden plots to soldiers and their families and sometime after 1800, soldiers and their families began to move down the hill near the San Diego River. Historian William Smythe noted that Don Blas Aguilar, who was born in 1811, remembered at least 15 such grants below Presidio Hill by 1821, of which only five of these grant lands within the boundaries of what would become Old Town had houses in 1821. These included the retired commandant Francisco Ruiz Adobe (now known as the Carrillo Adobe), another building later owned by Henry Fitch on Calhoun Street, the Ybanes and Serrano houses on Juan Street near Washington Street, and a small adobe house on the main plaza owned by Juan Jose Maria Marron.

In 1822 the political situation changed as Mexico won its independence from Spain and San Diego became part of the Mexican Republic. The Mexican Government opened California to foreign trade; began issuing private land grants in the early 1820s, creating the rancho system of large agricultural estates; secularized the Spanish missions in 1833; and oversaw the rise of the civilian pueblo. By 1827, as many as 30 homes existed around the central plaza and in 1835, Mexico granted San Diego official pueblo (town) status. At this time the town had a population of nearly 500 residents, later reaching a peak of roughly 600. By 1835 the presidio, once the center of life in Spanish San Diego, had been abandoned and lay in ruins. Mission San Diego de Alcalá fared little better. The town and the ship landing area at La Playa were now the centers of activity in Mexican San Diego. However, the new Pueblo of San Diego did not prosper as did some other California towns during the Mexican Period.

The secularization in San Diego County triggered increased Native American hostilities against the Californios during the late 1830s. The attacks on outlying ranchos, along with unstable political and economic factors helped San Diego's population decline to around 150 permanent residents by 1840. San Diego's official Pueblo status was removed by 1838 and it was made a subprefecture of the Los Angeles Pueblo. When the Americans took over after 1846, the situation had stabilized somewhat, and the population had increased to roughly 350 non-Native American residents. The Native American population continued to decline, as Mexican occupation brought about continued displacement and acculturation of Native American populations.

The American Period began in 1846 when United States military forces occupied San Diego and this period continues today. When United States military forces occupied San Diego in July 1846, the town's residents split on their course of action. Many of the town's leaders sided with the Americans, while other prominent families opposed the United States invasion. In December 1846, a group of Californios under Andres Pico engaged United States Army forces under General Stephen Kearney at the Battle of San Pasqual and inflicted many casualties. However, the Californio resistance was defeated in two small battles near Los Angeles and effectively ended by January 1847. The Americans assumed formal control with the Treaty of Guadalupe-Hidalgo in 1848 and introduced Anglo culture and society, American political institutions and especially American entrepreneurial commerce. In 1850, the Americanization of San Diego began to develop rapidly.

On February 18, 1850, the California State Legislature formally organized San Diego County. The first elections were held at San Diego and La Playa on April 1, 1850, for county officers. San Diego grew slowly during the next decade. San Diegans attempted to develop the town's interests through a transcontinental railroad plan and the development of a new town closer to the bay. The failure of these plans, added to a severe drought which crippled ranching and the onset of the Civil War, left San Diego as a remote frontier town. The troubles led to an actual drop in the town's population from 650 in 1850 to 539 in 1860. Not until land speculator and developer Alonzo Horton arrived in 1867 did San Diego begin to develop fully into an active American town.

Alonzo Horton's development of a New San Diego (modern downtown) in 1867 began to swing the community focus away from Old Town and began the urbanization of San Diego. Expansion of trade brought an increase in the availability of building materials. Wood buildings gradually replaced adobe structures. Some of the earliest buildings to be erected in the American Period were "pre-fab" houses that were built on the east coast of the United States and shipped in sections around Cape Horn and reassembled in San Diego. Development spread from downtown based on a variety of factors, including the availability of potable water and transportation corridors. Factors such as views and access to public facilities affected land values, which in turn affected the character of neighborhoods that developed. During the Victorian Era of the late 1800s and early 1900s, the areas of Golden Hill, Uptown, Banker's Hill and Sherman Heights were developed. Examples of the Victorian Era architectural styles remain in these communities, as well as in Little Italy, which developed at the same time. At the time downtown was being built, there began to be summer cottage/retreat development in what are now the Beach communities and La Jolla area. The early structures in these areas were not of substantial construction; they were primarily for temporary vacation housing.

Development also spread to the Greater North Park and Mission Hills areas during the early 1900s. The neighborhoods were built as small lots, a single lot at a time; there was not large tract housing development of those neighborhoods. It provided affordable housing away from the downtown area, and development expanded as transportation improved. Barrio Logan began as a

residential area, but because of proximity to rail freight and shipping freight docks, the area became more mixed with conversion to industrial uses. This area was more suitable to industrial uses because land values were not as high; topographically the area is more level, and it is not as interesting in terms of views as are the areas north of downtown. Various ethnic groups settled in the area because of the availability of land ownership.

San Ysidro began to be developed at about the turn of the twentieth century. The early settlers were followers of the Littlelanders movement. There, the pattern of development was designed to accommodate small plots of land for each homeowner to farm as part of a farming-residential cooperative community. Nearby Otay Mesa-Nestor began to be developed by farmers of Germanic and Swiss background. Some of the prime citrus groves in California were in the Otay Mesa-Nestor area; in addition, there were grape growers of Italian heritage who settled in the Otay River Valley and tributary canyons and produced wine for commercial purposes.

San Diego State University was established in the 1920s; development of the state college area began then and the development of the Navajo community was outgrowth from the college area and from the west. There was farming and ranching in Mission Valley until the middle portion of the twentieth century, when the uses were converted to commercial and residential. There were dairy farms and chicken ranches adjacent to the San Diego River where now there are motels, restaurants, office complexes and regional shopping malls. There was little development north of the San Diego River until Linda Vista was developed as military housing in the 1940s. The federal government improved public facilities and extended water and sewer pipelines to the area. From Linda Vista, development spread north of Mission Valley to the Clairemont Mesa and Kearny Mesa areas. Development in these communities was mixed use and residential on moderate size lots.

Tierrasanta, previously owned by the United States Navy, was developed in the 1970s. It was one of the first planned unit developments with segregation of uses. Tierrasanta and many of the communities that have developed since, such as Rancho Peñasquitos and Rancho Bernardo, represent the typical development pattern in San Diego in the last 25 to 30 years: uses are well segregated, with commercial uses located along the main thoroughfares and the residential uses located in between. Industrial uses are located in planned industrial parks. Examples of every major period and style remain. Among the recognized styles in San Diego are Spanish Colonial, Pre-Railroad New England, National Vernacular, Victorian Italianate, Stick, Queen Anne, Colonial Revival, Neoclassical, Shingle, Folk Victorian, Mission, Craftsman, Prairie, French Eclectic, Italian Renaissance, Spanish Eclectic, Egyptian Revival, Tudor Revival, Modernistic and International.

2.3 South Coastal Information Center Records Search

An examination of existing maps, records, and reports was conducted by Dudek to determine if the North City Project could potentially impact previously recorded cultural resources.

Dudek conducted a records search in July 2016 of data obtained from the South Coastal Information Center at San Diego State University. The search encompassed the APE and a 1-mile buffer around the APE. The purpose of the records search is to identify any previously recorded resources that may be located in or adjacent to the project area and to identify previous studies in the project vicinity. In addition to a review of previously prepared site records and reports, the records search also reviewed historical maps of the project area, ethnographies, the NRHP, the CRHR, the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and Archaeological Determinations of Eligibility. A review of the cultural resources records housed at Marine Corps Air Station (MCAS) Miramar assured that all resources located within the boundaries of MCAS Miramar were represented in the SCIC records search.

The records search identified 718 cultural resources within 1 mile of the APE. Of the 718 identified, 38 cultural resources fall within the APE (Table 1; see also Confidential Appendix B). The prehistoric sites include 14 artifact scatters, 5 milling stations, 3 possible temporary camps, and 9 isolated artifact locations. The historic-period sites include railroad features, a road, remnants of a water flume, a cistern, 2 refuse scatters, and a WWII training camp. To date, 3 of the resources have previously been evaluated and recommended not eligible for listing on the CRHR or NRHP, 1 is listed on the San Diego Register of Historic Resources, and the remaining 34 resources have not yet been evaluated.

The records search also identified that 878 previous archaeological studies have been conducted within 1 mile of the APE. Of the 878 studies, 557 studies cover a large portion of the APE (Table 2, provided in Confidential Appendix B). Of the 1566 acres in the APE, only 86 acres have never been surveyed, roughly 5% of the APE. Though most of the APE has been previously surveyed, nearly 500 of these surveys were conducted over 10 years ago.

Table 1
Previously Recorded Resources in APE

Site Number	TrinNo	Era	Description	NRHP/CRHR Eligibility
CR 450		Historic	Scripps-Meanley Ranch	San Diego Register of Historic Resources
NCAWPF-IF-1		Prehistoric	Isolated quartzite core	No formal evaluation
NCAWPF-IF-2		Prehistoric	Isolated metavolcanic flake	No formal evaluation
NCAWPF-IF-3		Prehistoric	Isolated quartzite flake	No formal evaluation
P-37-004505	CA-SDI-4505	Prehistoric	Pictograph panel, lithic scatter, and rock pile	No formal evaluation
P-37-006660	CA-SDI-6660	Historic	San Diego Mission Flume segment	No formal evaluation
P-37-009117	CA-SDI-9117	Historic	WWII training camp remnants	No formal evaluation
P-37-011077	CA-SDI-11077	Prehistoric	Bedrock milling feature	No formal evaluation
P-37-011459	CA-SDI-11459	Prehistoric	Lithic and groundstone scatter	No formal evaluation

Table 1
Previously Recorded Resources in APE

Site Number	TrinNo	Era	Description	NRHP/CRHR Eligibility
P-37-011611	CA-SDI-11611	Prehistoric	Lithic quarry	No formal evaluation
P-37-011612	CA-SDI-11612	Prehistoric	Lithic artifact scatter	No formal evaluation
P-37-011761	CA-SDI-11761	Historic	Concrete cistern	No formal evaluation
P-37-012138	CA-SDI-12138	Prehistoric	Shell midden and fire-affected rock	No formal evaluation
P-37-012139	CA-SDI-12139	Prehistoric	Lithic scatter	No formal evaluation
P-37-012408	CA-SDI-12408	Prehistoric	Lithic scatter	6Y
P-37-012439	CA-SDI-12439	Prehistoric	Artifact scatter	6Y
P-37-012453	CA-SDI-12453	Multicomponent	Shell, lithics, and historic glass scatter	No formal evaluation
P-37-013629	CA-SDI-13629	Historic	Foster rail depot	No formal evaluation
P-37-013630	CA-SDI-13630	Prehistoric	Bedrock milling and a rock art panel	No formal evaluation
P-37-013651	CA-SDI-13651	Prehistoric	Milling and artifact scatter	No formal evaluation
P-37-013846	CA-SDI-13846	Prehistoric	Bedrock milling site	No formal evaluation
P-37-014119		Prehistoric	Isolated core	No formal evaluation
P-37-014654	CA-SDI-14267	Multicomponent	Marine shell scatter and rock retaining wall	No formal evaluation
P-37-014655	CA-SDI-14268	Prehistoric	Milling artifact scatter	No formal evaluation
P-37-014656	CA-SDI-14269	Prehistoric	Milling artifact scatter	No formal evaluation
P-37-014657	CA-SDI-14270	Prehistoric	Artifact and marine shell scatter	No formal evaluation
P-37-014658	CA-SDI-14271	Prehistoric	Lithic and groundstone scatter	No formal evaluation
P-37-014660	CA-SDI-14273	Prehistoric	Lithic and marine shell scatter	No formal evaluation
P-37-014661	CA-SDI-14274	Prehistoric	Marine shell and flake scatter	No formal evaluation
P-37-014961		Prehistoric	Isolated flake	No formal evaluation
P-37-014981		Prehistoric	Isolated flake and core	No formal evaluation
P-37-015477		Prehistoric	Quartzite cobble tool	No formal evaluation
P-37-018327	CA-SDI-15556	Prehistoric	Shell and lithic scatter	No formal evaluation
P-37-026967	CA-SDI-17652	Prehistoric	Bedrock milling	No formal evaluation
P-37-026969	CA-SDI-17654	Historic	Glass scatter	No formal evaluation
P-37-026974	CA-SDI-17656	Historic	Concrete road	6Z
P-37-035477		Prehistoric	Isolated lithic flake	No formal evaluation
P-37-035478		Prehistoric	Isolated lithic flake	No formal evaluation

2.4 NAHC Sacred Lands File Search

A search of the NAHC Sacred Lands File was conducted for the North City Project APE on July 25, 2016 (Appendix C). A search of this type requires NAHC staff to review their list for the presence of Native American sites, which are organized spatially based on a Public Land Survey System section grid (measuring 1 square mile). The NAHC results letter indicated the presence of Native American sites within the North City Project APE, although specific locations and

details on the type of resources were not provided. Additionally, the NAHC response letter included a list of Native American group representatives whom should be contacted for information about these sites.

Outreach letters were mailed on August 16, 2016 to all Native American group representatives included on the NAHC contact list (Appendix C). These letters attempt to solicit additional information relating to Tribal Cultural Resources that may be affected by the North City Project. Native American representatives were requested to define a general area where known resources intersect the North City Project APE. This will help guide communications with tribal groups and representatives that maintain specific traditional associations with particular sectional of the North City Project APE. To date, there have been no responses to these outreach letters and no Tribal Cultural Resources have been indicated within the APE.

Under CEQA, the lead agency is required to perform formal government-to-government consultation with Native American Tribes under AB 52. Three tribal entities have previously requested to be included on the City's AB 52 Notice List for project consultation: the Iipay Nation of Santa Ysabel (Santa Ysabel), the Jamul Indian Village of Kumeyaay Nation (Jamul), and Mesa Grande Band of Mission Indians (Mesa Grande). The City sent initial consultation letters to representatives of these Tribal entities via certified mail on June 29, 2017 (Appendix C). Representatives from Santa Ysabel and Jamul responded positively to the consultation request while no response was received from Mesa Grande.

City representatives met with representatives from Santa Ysabel and Jamul on July 14, 2017. The City described the North City Project and presented the results of this inventory to the Tribal representatives. After reviewing the proposed mitigation measures (Section 7.2), both Santa Ysabel and Jamul representatives agreed that the required archaeological and Native American monitoring would reduce possible impacts to Tribal Cultural Resources to a non-significant level. At the conclusion of this meeting, Santa Ysabel and Jamul representatives agreed that no further consultation under AB 52 review is required.

3 RESEARCH DESIGN

While innumerable concepts and theoretical perspectives have been used to interpret archaeological findings in the San Diego region, several broad themes can be outlined that generally guide interpretations. These themes include site formation processes, chronology, settlement and site function, and subsistence. The research themes are designed to provide information that can be used to direct Phase II evaluation with the goal of determining NRHP/CRHR eligibility. Finally, this research design has been developed primarily with prehistoric resources in mind, given that no historic-period archaeological sites will be impacted by the North City Project and require evaluation.

3.1 Site Formation Processes

Prehistoric sites vary in complexity and duration of use, and both social and natural factors contribute to the formation and composition of their deposits. The nature of site occupation (e.g., food procurement and/or processing, other types of resource procurement, social events, and short-term or seasonal occupation) can lead to spatial patterning of artifacts, food remains, and site features.

Post-depositional processes can alter the character of prehistoric sites. Bioturbation, erosion, alluvial deposition, and historic and modern land use can affect the integrity of prehistoric archaeological sites. These disturbances complicate archaeological interpretation, particularly of complex, multicomponent sites. To the extent that site integrity enhances or deflates the interpretive potential of a cultural deposit, it may contribute to or detract from its scientific value:

- Do inclusive chronometric data from project sites permit the identification and definition of temporally and/or spatially discrete prehistoric occupations?
- Are the definitions of discrete components supported by multiple, independent chronological controls, and if so, how similar are their age estimates?
- Is there substantial evidence of occupational "overprinting"? How has this affected the temporal integrity of habitation components or refuse deposits?
- What kinds of impacts are affecting or have affected sites in different parts of the study area, and how extensive are they?
- Have adverse impacts affected the data potential of each evaluated site?

3.2 Chronology and Dating

Chronological issues are basic to any archaeological research design, as they provide the primary framework of prehistory. Previous research in the southern San Diego region has documented a range of prehistoric sites dating to both the Archaic (6000 BC to AD 500) and Late Prehistoric

periods (post-AD 500). To the southeast near Jamul, Yohe and Chace (1995) documented a late-La Jollan (i.e., Millingstone) deposit dominated by millingstones, handstones, cobble tools, and other items. In the eastern foothills and valley floors near Otay Mesa, a strong record that postdates AD 1000 has been documented (McDonald et al. 1993; Hale 2009). In all, sites that date to the last 1,000 years can have assemblages with large numbers of arrow points, small flake-based tools, and ceramics, but also include sizeable amounts of millingstones and handstones relative to mortars and pestles. The distribution of such artifacts is uneven at many sites in the southern San Diego region and there may be temporal patterning in how sites were occupied, leaving differential traces of assemblage constituents. Along these lines, potential research issues derived from this basic problem include:

- How did the transition from the Archaic period to the Late Prehistoric period occur?

This transition was characterized by shifts in food storage and cooking technology with the inception of ceramics, and possibly by a shift in hunting technology with the addition of the bow and arrow. These shifts did not occur simultaneously (McDonald et al. 1993), and their implications for local population expansion in the Late Prehistoric period are unknown.

- Was there a shift in emphasis of acorn use during the Late Prehistoric period?

The mortar and pestle appear to have been added to the repertoire of food processing tools during the Late Prehistoric period, but only in small numbers. Is there evidence for earlier use of bedrock mortars? Is the addition of the mortar and pestle correlated to the inception of ceramics in the region and/or intensified use of a particular resource?

Because chronological controls are essential to any archaeological investigation, several other basic questions concerning the temporal data potential of evaluated sites pertain to the current study, including:

- Can the chronological placement of project sites be determined?
- What kinds of chronometric data can project sites provide? Of those obtained, how well do they correlate in terms of the age estimates they provide (e.g., projectile point types versus obsidian hydration dates).
- Do marker artifacts appear to fit with temporal patterns recognized in the surrounding region? Are there any unique, temporally diagnostic items present?
- Can chronometric data from project sites help to refine dating schemes in the local region?

The possibility that cultural deposits from project sites are related to occupation of the ethnographic village of La Punta makes these questions even more important. The presence of aboriginal ceramics is often taken as a signal of post-AD 1400 occupation (Hale 2009) but ceramics have been in use in southern San Diego County for most of the last 1,500 years. Thus, the presence of ceramics at the current set of project sites does not necessarily mean that they derive from an ethnohistoric occupation identified by the Spanish in 1782. As such, evaluation of the project sites must corroborate time-sensitive artifacts with radiocarbon dates in strong stratigraphic contexts.

3.3 Settlement and Site Function

The Late Prehistoric is a time when significant shifts in settlement and subsistence may have occurred. While several important prehistoric sites and ethnohistoric villages are known for the local area, the character of settlement and subsistence shifts has not been fully explored. A key variable in understanding social organization during this time is to determine the kinds of socioeconomic shifts that occurred after adoption of the bow and arrow and the subsequent widespread use of ceramics. The current set of project sites may have the potential to generate important data for addressing this issue, particularly the presence of arrow points and abundant amounts of pottery. Specific data requirements include information on arrow-point manufacture, general patterns of lithic reduction, and raw material use—including exotic stone. Was arrow-point production occurring at sites in the project area, or were they discarded in exhausted condition? What does the debitage assemblage imply about the production and/or maintenance of stone tools at project sites?

Information on ceramic vessel form, function, and the diversity therein is also critical for determining whether residential occupation was brief or prolonged. How many kinds of vessels are indicated in the assemblage and for what purposes were they used? The latter is particularly important for understanding intensification in the exploitation of plant foods (Eerkens 2001). Is there evidence, in the form of clay daub and other manufacturing tools, that clay vessels were being manufactured at sites in the project area? Can food residues be obtained from ceramic artifacts recovered during evaluation?

The manufacture and use of groundstone implements can help clarify the nature of site occupation and settlement duration. Shaping of handstones and pestles can be an indication that populations are somewhat mobile, implying use in off-site contexts—the idea being that shaping can reduce mass thereby reducing transport costs (Hale 2001).

The term “village” evokes a sense of residential permanency, and, if a site is assumed to be a village, such an assumption can predicate the kinds of questions asked during an archaeological investigation. Alternatively, an investigation can test the assumption by asking questions about

the archaeological record. If the project sites are related to permanent village occupation, what is the subsistence toolkit expected to look like, given that stone raw material is not very abundant in the immediately available riverine deposits? Additionally, what is the faunal and floral profile expected to look like for a relatively permanent settlement of people? These are questions that can and should be developed and addressed during an evaluation.

3.4 Subsistence

Subsistence orientation and settlement patterns are interwoven and dependent on the availability of resources, together creating a system of decisions regarding settlement locations, desired faunal and vegetal resources, seasonal movements, food processing techniques, and storage habits. Subsistence strategies of the Kumeyaay have been described as bipolar, but dependent upon where the lineage home area was located. In reality though, most subsistence strategies were much more complex, and can be described as systems of "fission and fusion." In such a system, what is expected of subsistence during periods of fusion, when multiple families congregate in a common area, as may be the case for the current project sites? Are resources pooled among families, or is there evidence of privatization in the form of cache pits or storage containers within individual habitations?

Milling implements are common across San Diego County, and both macroscopic and microscopic vegetal remains (primarily seeds) may be present as residues on these kinds of tools and in the site matrix. Several questions that can be addressed using data from project sites are: What vegetal and faunal remains are present? How specialized was the subsistence strategy (i.e., were any species a focus of exploitation)? In particular, what role did acorns play versus small seeds and tubers or fish? What types of "exotic" food resources are present? Can seasonal and/or diachronic changes be discerned in the subsistence emphasis? If diachronic change is detected, can this be related to technological changes such as the introduction of ceramics, arrow points, and the mortar and pestle?

4 METHODS

The purpose of this study was to compile an inventory of all resources within the North City Project APE to determine possible impacts to cultural resources and potential effects to cultural resources. To complete this study, a review of all known resources and the identification of all new resources were necessary. Because the North City Project APE navigates through highly developed areas, much of the APE has been previously inventoried and most resources have been previously identified. Since many of these previous surveys were conducted more than ten years ago, an updated survey was deemed necessary. Those resources identified within the North City Project APE that project activities might not be able to avoid required evaluation of significance. This evaluation required archaeological testing and laboratory analysis.

4.1 Survey

The survey of the North City Project APE was conducted between July 25 and 29, August 27, and October 18, 2016. The APE is located in a highly developed area and it was determined prior to field work that survey of the entire APE would be unproductive. Large portions of the APE surface are covered by buildings, pavement, and landscaping, obscuring any remnants of archaeological sites. The cultural significance of these built environment features are being addressed in another technical study prepared for North City Project. The survey team first conducted a reconnaissance survey of the entire APE in a motor vehicle. This vehicle survey allowed the survey team to assess the APE and identify undeveloped, or at least less developed, portions of the APE where ground surface was visible and archaeological resources could be identified.

Linear portions of the APE, such as proposed pipeline routes, were surveyed using transects parallel to the route at 10-meter intervals. Larger, more open portions of the APE, such as proposed facility footprints, were surveyed using a combination of north/south and east/west transects at 15-meter intervals. In this manner, all portions of traversable land were subject to pedestrian survey. Portions of the APE that were so steep that they presented a safety risk or were so densely vegetated that ground visibility was completely obscured were not surveyed. Likewise, portions of the APE that were located on private property were not subject to pedestrian survey unless the City was granted access. This study will rely on previous inventories of MCAS Miramar property and thus no pedestrian survey of MCAS Miramar was performed.

An iPad Air with georeferenced project maps and GPS capabilities was used to aid surveying and site recordation. Records of sites previously identified within the APE were loaded onto the iPad for field reference. Field work was conducted under the supervision of Dudek archaeologist Matthew DeCarlo. Victor Herrera participated in the survey as a field crew member and Justin Linton of Red Tail Monitoring and Research Inc. participated in the survey as the Native American monitor.

The intent of the survey was to identify the presence and status of both previously recorded and unrecorded resources within the North City Project APE to determine the possible impacts the project might have on cultural resources. By being aware of their presence, the City can implement avoidance measures when possible to avoid impacts to the cultural resources in the APE. Because avoidance of cultural resources is the preferred method of mitigation, this study focused on the avoidability of cultural resources within the APE. Thus, resources that were difficult or unsafe to access, such as those located on private property or beyond some natural barrier such as a hillside or drainage, were not always surveyed as their avoidability was evident.

Documentation of cultural resources complied with the Office of Historic Preservation and Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation (48 FR 44716-44740) and the California Office of Historic Preservation Planning Bulletin Number 4(a). All sites identified during this inventory were recorded on California Department of Parks and Recreation Form DPR 523 (Series 1/95), using the Instructions for Recording Cultural Resources (Office of Historic Preservation 1995). New and updated site forms for each resource encountered are included in Confidential Appendix D and will be submitted to the South Coastal Information Center.

Visibility throughout the North City Project APE varied greatly. The areas immediately adjacent to paved and developed land often showed signs of previous grading. This often provided excellent ground visibility but the grading would have disturbed any cultural resource that may have been present. Other portions of the APE like Mission Gorge Road passed through less developed areas. The terrain in these areas was dominated by hillsides that were covered with grasses and dense chaparral. This reduced ground visibility to less than 5%. The weather was optimal during the survey with no cloud cover to cast shadows and obscure surface artifacts.

4.2 Excavation

While the evaluation strategy varied slightly based on the conditions encountered at each evaluated site, the same basic methods were employed. Sites were evaluated using close-interval survey, shovel test pits (STPs), and shovel test units (STUs). STPs are 0.5 meter × 0.3 meter, excavated in 20-centimeter levels. STUs are 1 meter × 0.5 meter, excavated in decimeter levels. All hand-excavated soils were screened through 1/8 inch (3 millimeter) mesh. All excavated units were backfilled at the conclusion of the unit's excavation.

Photographs of each unit profile were recorded to documented soils and disturbances. An iPad Air with georeferenced project maps and GPS capabilities was used to record the locations of excavation units and surface artifacts. Field notes were recorded on standardized forms to log artifact recovery, soil descriptions, disturbances, and any other pertinent information.

4.3 Laboratory and Cataloging Procedures

Initial laboratory procedures included cleaning (as appropriate), sorting, and cataloging of all artifacts and ecofacts. Each item was individually examined and cataloged according to class, subclass, and material; counted; and weighed on a digital scale. All coded data were entered into a Microsoft Access database. Data manipulation of a coded master catalog combining all sites was performed in Microsoft Excel.

The cultural material was sorted during cataloging into the following potential categories: 13 classes of prehistoric artifacts; 2 classes of ecofacts; ethnohistoric items, historic items, and modern items; and organic samples. The prehistoric artifact classes potentially included debitage, cores, utilized core tools, modified core tools, utilized flakes, retouched flakes, bifaces, percussing tools, groundstone, ceramics, bone artifacts, shell artifacts, and miscellaneous items.

Debitage, including both flakes and debris, was sorted by material type and cortical variation (primary, secondary, and interior) during cataloging. Maximum length, width, and thickness measurements were taken for all tools and cores using a sliding caliper.

Groundstone artifacts were classified by type, including millingstones and handstones. Maximum length, width, and thickness measurements were taken on complete groundstone items. Organic artifact classes (ecofacts) consisted of vertebrate specimens.

Once preliminary cataloging of the material was completed, more detailed attribute analysis of lithics and groundstone was performed. Stone artifacts (both flaked and ground) were individually analyzed for selected morphological and technological attributes, as well as material and condition, in an attempt to gain insight into the period of occupation and the range of activities undertaken. Ceramic artifacts were initially sorted by traditional ware (brown or buff) and sherd fragment types (body, rim, or modified). They were then inspected in order to identify other modifications. Specific analytical methods are described in the analytical results section. All artifacts, ecofacts, and samples were subject to appropriate conservation in the field and laboratory, including proper packaging and handling. Vertebrate remains were highly fragmented and could not be identified to family level so they were sorted by class and size.

4.4 Curation

All artifacts collected during archaeological testing for this study (Section 5.2) will be curated at the San Diego Archaeological Center. Any artifacts collected as part of future archaeological studies, or confiscated from looters, should also be curated so that the materials are preserved for the benefit of the general public and for archaeologists for future study. Proper curation of collected artifacts (and other materials, including documentation) can contribute to any mitigation to offset impacts to archaeological sites. Curation could also consist of interpretive displays as part of any public awareness activities.

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5 RESULTS

This section presents the results of the reconnaissance vehicle survey and the pedestrian survey.

5.1 Survey Results

Utilizing a combination of vehicular and pedestrian survey, the entire North City Project APE was inventoried. The North City Project APE consists of multiple components and several of these components consist of alternative routes. The inventory identified 38 previously identified and one newly identified resources dispersed among these Project components (Table 2). The condition and proximity to Project components of each of these 39 resources are described below, categorized by the North City Project component in which they were identified. Resource location maps showing the resource proximity to the APE can be found in Confidential Appendix E.

Table 2
Cultural Resources within the North City Project APE

Site Number	Era	Description	NRHP/CRHR Eligibility	North City Project Component	Project Proximity
CR 450	Historic	Scripps-Meanley Ranch	San Diego Register of Historic Resources	North City Pipeline	Within 100 ft.
NCAWPF-IF-1	Prehistoric	Isolated quartzite core	No formal evaluation	NCPWF	Intersects
NCAWPF-IF-2	Prehistoric	Isolated metavolcanic flake	No formal evaluation	NCPWF	Intersects
NCAWPF-IF-3	Prehistoric	Isolated quartzite flake	No formal evaluation	NCPWF	Intersects
P-37-004505	Prehistoric	Pictograph panel, lithic scatter, and rock pile	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-006660	Historic	San Diego Mission Flume segment	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-009117	Historic	WWII training camp remnants	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-011077	Prehistoric	Bedrock milling feature	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-011459	Prehistoric	Lithic and groundstone scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-011611	Prehistoric	Lithic quarry	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-011612	Prehistoric	Lithic artifact scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-011761	Historic	Concrete cistern	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-012138	Prehistoric	Shell midden and fire affected rock	No formal evaluation	Metro Biosolids Center (MBC)	Intersects
P-37-012139	Prehistoric	Lithic scatter	No formal evaluation	MBC	Intersects

Table 2
Cultural Resources within the North City Project APE

Site Number	Era	Description	NRHP/CRHR Eligibility	North City Project Component	Project Proximity
P-37-012408	Prehistoric	Lithic scatter	6Y	LFG Pipeline; San Vicente Pipeline	Intersects
P-37-012439	Prehistoric	Artifact scatter	6Y	LFG Pipeline; San Vicente Pipeline	Intersects
P-37-012453	Multicomponent	Shell, lithics, and historic glass scatter	No formal evaluation	Morena Pipelines	Within 100 ft.
P-37-013629	Historic	Foster rail depot	No formal evaluation	San Vicente Pipeline – Tunnel Alternative Terminus (TAT)	Intersects
P-37-013630	Prehistoric	Bedrock milling and a rock art panel	Recommended eligible CRHR	San Vicente Pipeline – TAT	Intersects
P-37-013651	Prehistoric	Milling and artifact scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-013846	Prehistoric	Bedrock milling site	No formal evaluation	San Vicente Pipeline – In-Reservoir Alternative Terminus (IRAT); San Vicente Pipeline – Marina Alternative Terminus (MAT)	Within 100 ft.
P-37-014119	Prehistoric	Isolated core	No formal evaluation	San Vicente Pipeline – MAT	Within 100 ft.
P-37-014654	Multicomponent	Marine shell scatter and rock retaining wall	No formal evaluation	San Vicente Pipeline	Intersects
P-37-014655	Prehistoric	Milling artifact scatter	No formal evaluation	San Vicente Pipeline	Intersects
P-37-014656	Prehistoric	Milling artifact scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-014657	Prehistoric	Artifact and marine shell scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-014658	Prehistoric	Lithic and groundstone scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-014660	Prehistoric	Lithic and marine shell scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-014661	Prehistoric	Marine shell and flake scatter	No formal evaluation	San Vicente Pipeline	Intersects
P-37-014961	Prehistoric	Isolated flake	No formal evaluation	San Vicente Pipeline	Within 100 ft.
P-37-014981	Prehistoric	Isolated flake and core	No formal evaluation	LFG Pipeline	Intersects
P-37-015477	Prehistoric	Quartzite cobble tool	No formal evaluation	San Vicente Pipeline – IRAT	Within 100 ft.
P-37-018327	Prehistoric	Shell and lithic scatter	No formal evaluation	Miramar Water Treatment Plant	Intersects
P-37-026967	Prehistoric	Bedrock milling	No formal evaluation	San Vicente Pipeline	Within 100 ft.

Table 2
Cultural Resources within the North City Project APE

Site Number	Era	Description	NRHP/CRHR Eligibility	North City Project Component	Project Proximity
P-37-026969	Historic	Glass scatter	No formal evaluation	San Vicente Pipeline – TAT	Within 100 ft.
P-37-026974	Historic	Concrete road	6Z	San Vicente Pipeline	Intersects
P-37-035477	Prehistoric	Isolated lithic flake	No formal evaluation	Morena Pipelines	Intersects
P-37-035478	Prehistoric	Isolated lithic flake	No formal evaluation	Morena Pipelines	Within 100 ft.
P-37-036497	Prehistoric	Bedrock milling	Recommended not eligible	San Vicente Pipeline – TAT	Within 100 ft.

5.1.1 North City Project Common Components

The North City Project has proposed two alternative reservoirs to receive the purified water produced by the NCPWF: Miramar Reservoir and San Vicente Reservoir. This section will describe the components that will be used regardless of which reservoir will ultimately receive the purified water. The components that will be used in the Miramar Reservoir Alternative and the San Vicente Reservoir Alternative are discussed in Sections 5.1.2 and 5.1.3, respectively.

5.1.1.1 Morena Pump Station

No cultural resources have been identified within the Morena Pump Station APE.

5.1.1.2 Morena Wastewater Forcemain and Brine/Centrate Line

Cultural resources within the Morena Pipelines APE are presented in Table 3 and are discussed following the table.

Table 3
Cultural Resources within the Morena Pipelines APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-012453	Multicomponent	Shell, lithics, and historic glass scatter	No formal evaluation	Within 100 ft
P-37-035477	Prehistoric	Isolated lithic flake	No formal evaluation	Intersects
P-37-035478	Prehistoric	Isolated lithic flake	No formal evaluation	Within 100 ft

P-37-012453; CA-SDI-12453

This multicomponent artifact scatter was identified in 1991 and included historical glass fragments, prehistoric lithics with possibly associated marine shell. The assemblage consisted of a volcanic rock core, volcanic flakes, and cobalt blue glass sherds. The record noted that a railroad line bisected the scatter and greatly disturbed the site. A site record update in 2011 could

not relocate any cultural material and postulated that the scatter was destroyed during the construction of the second rail line in 2002.

The current study revisited the site and, like the 2002 survey, was unable to identify any remnants of the P-37-012453 scatter. To observing railway safety protocol, the current survey maintained a 25-foot buffer from the railway. Extensive earth moving is evident and a large portion of the original site boundary is now covered by rock ballast, dirt roads, and leveled roadside. The original site boundary falls within the Morena Pipelines APE, but because the site is no longer extant, no avoidance measures are recommended during adjacent project activities.

P-37-035477

This prehistoric isolate was recorded in 2016 as two metavolcanic and one quartzite flake. The flakes were recovered during potholing activities within Genesee Avenue. Because isolates do not possess a data potential great enough to be considered eligible for the NRHP or the CRHR, no avoidance measures are recommended during adjacent construction activities.

P-37-035478

This prehistoric isolate was recorded in 2016 and consists of one quartzite flake. The flake was recovered from back dirt from a trench excavated during sewer work. Because isolates do not possess a data potential great enough to be considered eligible for the NRHP or the CRHR, no avoidance measures are recommended during adjacent construction activities.

5.1.1.3 North City Water Reclamation Plant Expansion, Influent Pump Station, and Renewable Energy Facility

No cultural resources have been identified within the NCWRP, Influent Pump Station, or Renewable Energy Facility APE.

5.1.1.4 North City Pure Water Facility

Cultural resources within the NCPWF APE are presented in Table 4, and are discussed following the table.

Table 4
Cultural Resources within the NCPWF APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
NCAWPF-IF-1	Prehistoric	Isolated quartzite core	No formal evaluation	Intersects
NCAWPF-IF-2	Prehistoric	Isolated metavolcanic flake	No formal evaluation	Intersects
NCAWPF-IF-3	Prehistoric	Isolated quartzite flake	No formal evaluation	Intersects

NCAWPF-IF-1

This prehistoric isolate was recorded in 2016 as a tan, medium-grained, quartzite core fragment. The current survey relocated the isolate within the NCPWF APE. Because isolates do not possess the research potential to be listed on the NRHP or the CRHR, no avoidance measures will be required during construction activities.

NCAWPF-IF-2

This prehistoric isolate was recorded in 2016 as a brown, metavolcanic flake isolate. The current survey relocated the isolate within the NCPWF APE. Because isolates do not possess the research potential to be listed on the NRHP nor the CRHR, no avoidance measures will be required during construction activities.

NCAWPF-IF-3

This prehistoric isolate was recorded in 2016 as a grey, medium-grained, quartzite flake isolate. The current survey was unable to relocate the isolate within the dense vegetation that covers the NCPWF APE. Because isolates do not possess the research potential to be listed on the NRHP or the CRHR, no avoidance measures will be required during construction activities.

5.1.1.5 North City Pure Water Pump Station

No cultural resources have been identified within the North City Pump Station APE.

5.1.1.6 Landfill Gas Pipeline

Cultural resources within the LFG Pipeline APE are presented in Table 5, and are discussed following the table.

Table 5
Cultural Resources within the Landfill Gas Pipeline APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-012408	Prehistoric	Lithic scatter	6Y	Intersects
P-37-012439	Prehistoric	Artifact scatter	6Y	Intersects
P-37-014981	Prehistoric	Isolated flake and core	No formal evaluation	Intersects

P-37-012408; CA-RIV-12408

This prehistoric artifact scatter was first identified in 1991 and described as a lithic scatter of 25-35 specimens including scrapers, flakes, debitage, a mano, and a core. The initial recordation

noted that the site had been disturbed by grading and vegetation clearing activities. The site was revisited in 1995 for archaeological testing. The study collected 73 stone tools and flakes from the surface. Ten shovel test probes and ten test units were excavated that produced 69 similar artifacts. The 1995 study recommended that the site was not eligible for listing on the NRHP. A later visit to the site in 1995 was unable to relocate the site.

The current study did not revisit the site as it was located on MCAS Miramar; however, aerial photographs show that the location of P-37-012408 was completely developed between 2010 and 2012. The proposed LFG Pipeline APE bisects the resource boundaries; however, because the resource is no longer extant, no avoidance measures are recommended during adjacent construction activities.

P-37-012439; CA-RIV-12439

This prehistoric artifact scatter was first identified in 1991 and described as a lithic scatter of 25-30 specimens including flakes, scrapers, and a mano. The site was revisited and tested in 2006. The study only found one isolated quartz flake on the surface within the site boundaries. Four shovel test probes and one test unit produced no subsurface component. The 2006 study recommended the resource not eligible for listing on the NRHP.

The current study did not revisit the P-37-012439 as it is located on MCAS Miramar. Though the LFG Pipeline APE bisects the recorded site boundaries, because the site is no longer extant, no avoidance measures are recommended during adjacent construction activities.

P-37-014981

This prehistoric isolate was recorded in 1990 as a quartzite flake and core. The original site record map suggests that the resource was discovered within the roadbed of Miramar Road. Because this portion of Miramar Road was constructed as early as 1972, it is unclear how this could be. The LFG Pipeline APE bisects the recorded isolate boundary but because isolates are considered not eligible for listing in the NRHP or the CRHR, no avoidance measures will be required during adjacent construction activities.

5.1.1.7 Metro Biosolids Center

Cultural resources within the Metro Biosolids Center (MBC) APE are presented in Table 6, and are discussed following the table.

Table 6
Cultural Resources within the MBC APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-012138	Prehistoric	Shell midden and fire-affected rock	No formal evaluation	Intersects
P-37-012139	Prehistoric	Lithic scatter	No formal evaluation	Intersects

P-37-012138; CA-SDI-12138

This prehistoric scatter was identified in 1992 as a shell midden with a scatter of fire-affected rock and artifact scatter. The artifacts included one granitic mano, a granitic mano fragment, and more than 30 volcanic and quartzite flakes. The site was revisited in 1995 but the survey could not relocate the scatter. That study postulated that the site was destroyed by activities at Miramar Landfill.

The current study revisited the P-37-012138 location and found that it has been completely developed into the MBC. All areas within the Center have been covered by buildings, pavement, or landscaping. Construction of the MBC can be seen on aerial maps from 1996, likely marking the complete destruction of P-37-012138. Because the site is no longer extant, no avoidance measures are recommended during any adjacent construction activities.

P-37-012139; CA-SDI-12139

This prehistoric artifact scatter was originally recorded in 1992 and included three lithic cores and more than 40 flakes of fine-grained volcanic materials. The light scatter covered a low knoll and measured 50 meters × 150 meters. The site was revisited in 1995 but the survey could not relocate the scatter. That study postulated that the site was destroyed by activities at Miramar Landfill.

The current study revisited the P-37-012139 location and found that it has been completely developed into the MBC. All areas within the Center have been covered by buildings, pavement, or landscaping. Construction of the MBC can be seen on aerial maps from 1996, likely marking the complete destruction of P-37-012139. Because the site is no longer extant, no avoidance measures are recommended during any adjacent construction activities.

5.1.2 Miramar Reservoir Alternative

This section describes the components that will be utilized should the Miramar Reservoir ultimately receive the purified water produced at the NCPWF.

5.1.2.1 North City Pure Water Pipeline

Cultural resources within the North City Pipeline APE are presented in Table 7, and are discussed following the table.

Table 7
Cultural Resources within the North City Pipeline APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
CR 450	Historic	Scripps-Meanley Ranch	San Diego Register of Historic Resources	Within 100 ft

CR 450

This cultural resource was originally recorded in 1986 as the T.M. Meanley House, a ranch complex constructed during 1934–1935 for Thomas Meanley and Nackey Scripps Meanley, daughter of prominent newspaper publisher Edward Willis Scripps. At the time of initial recordation, the complex consisted of a Mission Revival architectural style home, stables and workshops, a stone wall, a eucalyptus-tree-lined dirt drive, and Evan's Pond, which originally provided irrigation water for the property. Nackey Scripps Meanley passed in 1981 and her husband, Thomas, in 1985. In June 1985 the property, including the ranch and stable complex as well as the acreage, was sold to Currie/Samuelson Development Co. for $11,505,000 for commercial/industrial development (Ryon 1985). The 1986 recordation of the complex served as mitigation for proposed demolition of the house and outbuildings, which aerial photographs show was completed prior to 1989.

In 2000, the site was revisited and three of the original features were found to be extant: the stone wall, the segment of eucalyptus tree-lined dirt drive adjacent to the wall, and Evan's Pond (Figure 6). The extant features were then nominated and listed in the local San Diego Register of Historic Resources as CR 450. The stone wall, segment of tree-lined dirt drive, and Evan's Pond are still recognizable today and are used as public space adjacent to the Scripps Miramar Ranch Library Center.

Figure 6. View of the stone wall and Evan's Pond, looking east-southeast.

The current survey revisited CR 450 and found it to be in relatively the same condition as recorded in 2000. A site survey conducted on August 27, 2016, documented the existing conditions of the three remaining built historic resources. The tree-lined dirt drive and Evan's Pond are intact and in good condition. However, the stone wall is in fair to poor condition. Sections along the top edge and sporadic cobbles are missing and, despite evidence of previous mortar repair campaigns, numerous cracks (some quite large) are evident (Figure 7).

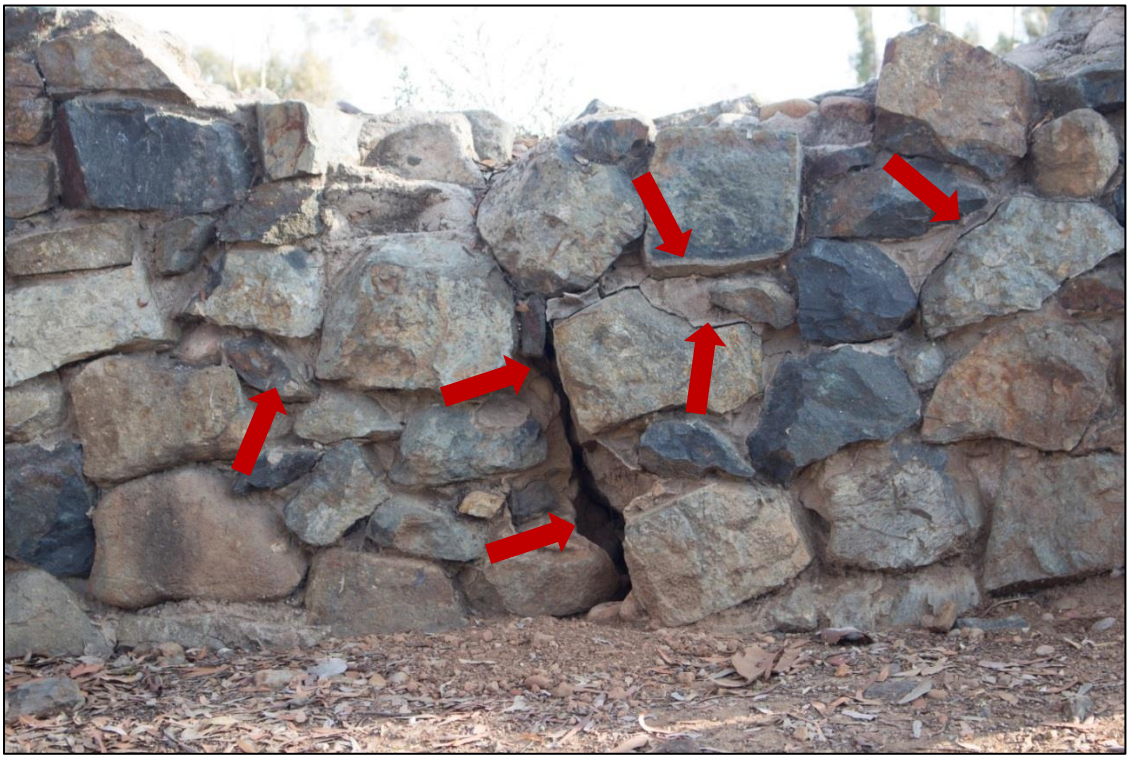

Figure 7. Detail view of wall section showing missing portions and cracks (red arrows).

The North City Pipeline route requires directional drilling to install the pipeline under Evans Pond. To accomplish this horizontal drilling, a launching pit is proposed south of Evans Pond. The pit and installation of pipeline will have no impact on the pond; however, the proposed pit is near the location of the former stables and workshops for CR 450. Although the workshop buildings are no longer extant and the site has been previously graded, there is an increased chance of encountering cultural materials while excavating this pit. The other two CR 450 features, the dirt drive and the stone wall, are located 200 feet west of the APE. While there are no anticipated effects to the resource due to vibration from the horizontal drilling, there is a potential for an indirect adverse effect under Section 106 and a significant impact under CEQA if vibrations from drilling further degrade the condition of the rock wall. Effects to historical built environment resources, including the potential adverse effects to the rock wall at CR 450, are discussed in a separate report.

5.1.2.2 Dechlorination Facility

No cultural resources have been identified within the Dechlorination Facility APE.

5.1.2.3 Miramar Water Treatment Plant

Cultural resources within the Miramar Water Treatment Plant (WTP) APE are presented in Table 8, and are discussed following the table.

Table 8
Cultural Resources within the Miramar WTP APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-018327	Prehistoric	Shell and lithic scatter	No Formal Evaluation	Intersects

P-37-018327; CA-SDI-15556

This low-density scatter of marine shell and three possible metavolcanic flakes was originally recorded in 1999. The scatter is located on the premises of the Miramar WTP and was likely disturbed by the construction of the facility. Shell and the possible lithic flakes were exposed in the landscaped and less developed areas of the plant. The site was revisited in 2009 and found to be in the same condition as originally recorded.

The current study found that the majority of the less developed areas in which the scatter was identified are located in the periphery of the Miramar WTP. Because North City Project activities are not planned in these areas, this sparse scatter will not be impacted by project activities.

5.1.3 San Vicente Reservoir Alternative

This section describes the components that will be used should the San Vicente Reservoir ultimately receive the purified water produced at the NCPWF. Three possible routes for the terminus of the San Vicente Pipeline were inventoried.

5.1.3.1 San Vicente Pure Water Pipeline

Cultural resources within the San Vicente Pipeline APE are presented in Table 9, and are discussed following the table.

Table 9
Cultural Resources within the San Vicente Pipeline APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-004505	Prehistoric	Pictograph panel, lithic scatter, and rock pile	No formal evaluation	Within 100 ft
P-37-006660	Historic	San Diego Mission Flume segment	No formal evaluation	Within 100 ft
P-37-009117	Historic	WWII training camp remnants	No formal evaluation	Within 100 ft
P-37-011077	Prehistoric	Bedrock milling feature	No formal evaluation	Within 100 ft

Table 9
Cultural Resources within the San Vicente Pipeline APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-011459	Prehistoric	Lithic and groundstone scatter	No formal evaluation	Within 100 ft
P-37-011611	Prehistoric	Lithic quarry	No formal evaluation	Within 100 ft
P-37-011612	Prehistoric	Lithic artifact scatter	No formal evaluation	Within 100 ft
P-37-011761	Historic	Concrete cistern	No formal evaluation	Within 100 ft
P-37-012408	Prehistoric	Lithic scatter	6Y	Intersects
P-37-012439	Prehistoric	Artifact scatter	6Y	Intersects
P-37-013651	Prehistoric	Milling and artifact scatter	No formal evaluation	Within 100 ft
P-37-014654	Multicomponent	Marine shell scatter and rock retaining wall	No formal evaluation	Intersects
P-37-014655	Prehistoric	Milling artifact scatter	No formal evaluation	Intersects
P-37-014656	Prehistoric	Milling artifact scatter	No formal evaluation	Within 100 ft
P-37-014657	Prehistoric	Artifact and marine shell scatter	No formal evaluation	Within 100 ft
P-37-014658	Prehistoric	Lithic and groundstone scatter	No formal evaluation	Within 100 ft
P-37-014660	Prehistoric	Lithic and marine shell scatter	No formal evaluation	Within 100 ft
P-37-014661	Prehistoric	Marine shell and flake scatter	No formal evaluation	Intersects
P-37-014961	Prehistoric	Isolated flake	No formal evaluation	Within 100 ft
P-37-026967	Prehistoric	Bedrock milling	No formal evaluation	Within 100 ft
P-37-026974	Historic	Concrete road	6Z	Intersects

P-37- 004505; CA-SDI-004505

This prehistoric temporary camp site was originally recorded in 1978 as a large area, low density lithic scatter that included milling features and a single pictograph panel. The site boundaries encompass a depression and distant hillside north of Mission Gorge Road. Nine loci were identified throughout the half-mile-wide site. A 1995 update consisted of a pictograph analysis only. Three pictograph panels were identified, consisting of anthropomorphic and geometric shapes painted in red on a southeast-facing granitic boulder.

Locus A of P-37-004505, consisting of a basalt flaked scraping tool and four additional flakes, is located immediately north of Mission Gorge Road. The San Vicente Pipeline component proposes that the pipeline will be installed along the southern side of the road. The APE extends roughly 20 feet north of Mission Gorge Road into the site boundary of P-37-004505. The current survey found the terrain immediately north of the road to be steep and heavily vegetated presenting a safety risk and poor visibility. The hillside and vegetation act as natural barriers between any proposed San Vicente Pipeline project activities and the resource. Due to the dangerous terrain and its high avoidability, P-37-004505 was not revisited during the current survey. The resource will be avoided and not impacted provided the adjacent construction activities are limited to the existing road corridor.

P-37- 006660; CA-SDI-006660

These segments of the San Diego Mission Flume was originally recorded in 1978 as a water conveyance system constructed of earth, stone, brick, and tile. A trench was excavated into the hillside along the San Diego River and local rocks were piled on the downhill edge to create a short wall. Wide bricks and stones were placed at the base of the trench to support a mission-made tile on which the water flowed. By 1978, the flume was greatly disturbed and only the stone retaining wall and trench were evident in many sections. A 2008 site record update identified eight previously unrecorded Flume segments running parallel to Mission Gorge Road.

The current survey was unable to revisit P-37-006660 due to access restrictions. The 2008 site record update suggests that segments 7 and 8 fall within the San Vicente Pipeline component APE. Though in the APE, P-37-006660 is located in a section of the alignment that will be directionally drilled. The proposed drilling pit is projected 150 feet north of and uphill from the resource, and the underground tunnel will have no impact on the surface resource. No avoidance measures will be required during adjacent construction activities provided that directional drilling will be the method of pipe installation and construction activities are confined to the drilling pit.

P-37- 009117; CA-SDI-009117

This site was originally recorded in 1981 as a possible World War II training camp. The site contained several concrete slabs, refuse scatters, and demolished building materials. A possible prehistoric lithic scrapper was also identified and collected. A site record update in 1992 found the site to be 90% destroyed by grading activities associated with the Miramar Landfill. Most of the concrete slabs and debris had been pushed into a ravine and were difficult to observe. Metal, glass, and concrete fragments have been scattered across the site boundary. The 1992 update did note that several slabs were still in situ in the southern portion of the mesa top site, one measuring 25 × 50 ft. Another site record update in 2014 identified only three elements associated with P-37-009117, including two piles of broken concrete and a scatter of roughly 25 church-key opened soldered cans. The original site boundaries measured 1,000 by 800 ft.

The current survey was not granted permission to revisit P-37-009117. The proposed San Vicente Pipeline APE encroaches on the originally recorded boundary of P-37-009117 but is nearly 300 feet east of any of the extant features of the resource recorded in 2014. Also, this portion of the San Vicente Pipeline consists of an extant pipeline that will be repurposed for the Project. No ground disturbance will be necessary near P-33-009117 and the resource will not be impacted.

P-37-011077; CA-SDI-11077

This prehistoric milling station was originally recorded in 1989 as consisting of one bedrock outcrop that included three lightly worn slicks. Ground visibility was high and a single bifacial mano was identified adjacent to the milling station. The resource was located on a hillside overlooking an ephemeral drainage and described as remote and unlikely to be disturbed by humans. A 1990 site record update described the site as containing only two boulders, each with one milling slick.

The current survey revisited P-37-011077 and found the milling station to be in the same condition as previously recorded. Though located within the APE, the 10 × 10 meter resource is located 70 feet east of Mission Gorge Road (Figure 8). Dense brush separates the site from the road. The dense brush acts as a natural barrier between the proposed San Vicente Pipeline project activities and the resource. P-37-011077 is highly avoidable and project activities will not impact it provided the adjacent construction activities are limited to the existing road corridor.

P-37-011459; CA-SDI-11459

This prehistoric artifact scatter was recorded in 1989 and consisted of three mano fragments, two cores, and four quartzite flakes. The light scatter covered an area of 125 × 120 m, and five STPs determined that the site had no depth. The site was located north of Mission Gorge Road in an undeveloped field in 1989.

During the current survey, the recorded location P-37-011459 was revisited; however, the location has been completely developed. The area now consists of a residential development and the previous site boundaries are covered by a home, pavement, and landscaping. Historical aerial photographs suggest that the residential development was constructed between 1989 and 1995. The resource has been completely destroyed and no avoidance measures will be required during adjacent construction activities.

Figure 8. Dense vegetation separating project activities and P-37-011077 (red arrow).

P-37-011611; CA-SDI-11611

This prehistoric quarry was recorded in 1990 as an exposure of white metavolcanic material with red-stained fractures. The low-lying material exposure is located on a hillside with materials and flakes eroding down the hillside. The original record noted 400+ flakes and angular assayed cobbles.

P-37-011611 is located 40 feet north of Mission Gorge Road. A hillside slopes steeply upward from Mission Gorge Road towards the resource. Due to the steep slope and poor visibility, only the southernmost extent of the resource, the 30 feet wide section that fell within the APE, was surveyed during the current study. The current survey found no lithic flakes within this section of the site.

The hillside acts as a natural barrier between the proposed San Vicente Pipeline project activities and P-37-011611. This resource is highly avoidable and project activities will not impact it provided the adjacent construction activities are limited to the existing road corridor.

P-37-011612; CA-SDI-11612

This prehistoric artifact scatter was originally recorded in 1990 and consisted of three manos, a core, a hammerstone, and five fine-grained green metavolcanic flakes. The site was identified on a knoll near a large hillside, adjacent to Mission Gorge Road. The original recordation noted that there was extensive grading in areas adjacent to the resource and postulated that the original extent of the site might have been impacted. Intensive survey in 2004 was unable to relocate any artifacts and noted that the site area appears to have been subject to ground disturbing activities.

The current survey revisited P-37-011612 and, like the 2004 survey, could not relocate the artifacts. The area shows signs of ground disturbing activities likely associated with the construction of Mission Gorge Road to the south and the trailhead parking area to the west. The dense vegetation obscured ground visibility and may have hidden artifacts. Regardless, the resource boundary is 50 feet north of Mission Gorge Road where project activities are proposed. Additionally, the hillside acts as a natural barrier between the proposed project activities and the resource boundary. Any possible remnants of the resource will not be impacted provided the adjacent construction activities are limited to the existing road corridor.

P-37-011761; CA-SDI-11761

This historic feature was recorded in 1990 and consists of a possible cistern with round, steel-reinforced concrete walls. The possible cistern was in good condition but its age was undetermined.

During the current survey, the recorded location P-37-011761 was revisited; however, the location has been completely developed. The area now consists of a residential development and the previous site boundaries are covered by a home, pavement, and landscaping. Historical aerial photographs suggest that the residential development was constructed between 1989 and 1995. The resource has been completely destroyed and no avoidance measures will be required during adjacent construction activities.

P-37-012408; CA-RIV-12408

This prehistoric artifact scatter was first identified in 1991 and described as a lithic scatter of 25–35 specimens including scrapers, flakes, debitage, a mano, and a core. The initial recordation noted that the site had been disturbed by grading and vegetation clearing activities. The site was revisited in 1995 for archaeological testing. The study collected 73 stone tools and flakes from the surface. Ten shovel test probes and ten test units were excavated that produced 69 similar artifacts. The 1995 study recommended that the site was not eligible for listing on the NRHP. A later visit to the site in 1995 was unable to relocate the site.

The current study did not revisit the site, because it was located on MCAS Miramar; however, aerial photographs show that the location of P-37-012408 was completely developed between 2010 and 2012. The proposed San Vicente Pipeline APE bisects the resource boundaries; however, because the resource is no longer extant, no avoidance measures are recommended during adjacent construction activities.

P-37-012439; CA-RIV-12439

This prehistoric artifact scatter was first identified in 1991 and described as a lithic scatter of 25–30 specimens, including flakes, scrapers, and a mano. The site was revisited and tested in 2006. The study only found one isolated quartz flake on the surface within the site boundaries. Four shovel test probes and one test unit produced no subsurface component. The 2006 study recommended the resource not eligible for listing on the NRHP.

The current study did not revisit the P-37-012439, because it is located on MCAS Miramar. The San Vicente Pipeline APE bisects the recorded site boundaries; however, because the site is no longer extant, no avoidance measures are recommended during adjacent construction activities.

P-37-13651; CA-SDI-13651

This prehistoric habitation site was originally recorded in 1993 as containing five milling features with over 30 elements, lithic tools, debitage, ceramic fragments, fire-affected rock, and midden. A 2009 site record update found the resources to be in the same condition as 1993 but expanded the resource boundary to include an additional milling feature.

The current survey revisited P-37-13651 and found it to be in the same condition as previously recorded in 2009. The resource is located 50 feet east of the San Vicente Pipeline APE centerline; however, the resource is located atop a hillside. The steep hillside acts as a natural barrier between the proposed project activities and the resource boundary. The resource is easily avoidable and will not be impacted provided the adjacent construction activities are limited to the existing road corridor.

P-37-014654; CA-SDI-014267

This multicomponent resource was originally recorded in 1996 as a prehistoric marine shell scatter and a historic rock retaining wall. The marine shells included *Chione*, *Pecton*, *Ostrea*, limpet, and gastropod. The rock retaining wall was 20 meters long and three courses high. A site record update in 2002 could not gain access to the private property due to a fence. From Moreno Avenue, the surveyors were able to confirm that the retaining wall was still present and that the shell scatter area had recently been brushed.

The current survey revisited P-37-014654 but could not gain access to the private property. The current survey could not relocate the rock retaining wall by looking though the fence. Recent earth moving activities have taken place within the private property it is possible that the resource has been destroyed (Figure 9). This cannot be confirmed unless access to the property is granted. Regardless, though it falls within the San Vicente Pipeline APE, the private fence protects the recorded location of the resource from project activities. This resource location is easily avoidable and will not be impacted provided the adjacent project activities are limited to the existing road corridor.

Figure 9. Extensive earthmoving activity within P-37-014654 site boundary, looking northeast.

P-37-014655; CA-SDI-14268

This prehistoric artifact scatter was originally recorded in 1996 as four metate fragments, seven pieces of debitage, one bifacial mano fragment, and one pestle fragment. The resource was recorded on the east side of Moreno Avenue but the surveyors could not explore the resource further east due to private property fences. An update in 1997 found that a large portion of the

site had been graded. Subsurface testing produced no prehistoric artifacts and confirmed that road fill or cobble was introduced into the area during the construction of Moreno Avenue.

The current survey revisited P-37-014655 but was unable to relocate any artifacts. The area between the private property and Moreno Avenue has been completely leveled and is used by the adjacent residence for vehicle parking. Any remnants of the resource may have been destroyed by roadside maintenance or collected by the local residences. Though the resource was located within the San Vicente Pipeline APE, it has been completely destroyed so no avoidance measures will be required during adjacent project activities.

P-37-014656; CA-SDI-14269

This prehistoric artifact scatter was recorded in 1996 as two pestles, a groundstone fragment, and a truncated metate fragment. The resource was recorded on the east side of Moreno Avenue but the surveyors could not explore the resource further east due to private property fences.

The current survey revisited P-37-014656 but was unable to relocate any artifacts. The area between the private property and Moreno Avenue has been completely leveled and is used by the adjacent residence for vehicle parking. Any remnants of the resource may have been destroyed by roadside maintenance or collected by the local residences. The resource was located within the San Vicente Pipeline APE; however, it has been completely destroyed, so no avoidance measures will be required during adjacent project activities.

P-37-014657; CA-SDI-14270

This prehistoric scatter was recorded in 1996 and included marine shell, two manos, and one piece of debitage. The resource was identified on the east side of Moreno Avenue but the surveyors could not explore the resource further east due to private property fences.

The current survey attempted to revisit P-37-014656 but was separated from the resource by a private fence. The area within the fence has been completely graded with several building. Though the resource is located within the San Vicente Pipeline APE, the private fence will protect the site from the proposed trenching within or immediately adjacent to Moreno Avenue. This resource location is easily avoidable and will not be impacted provided the adjacent project activities are limited to the existing road and shoulder corridor.

P-37-014658; CA-SDI-14271

This prehistoric artifact scatter was recorded in 1996 as two pieces of debitage, a mano, a pestle, and a possible metate fragment. The resource was recorded on the east side of Moreno Avenue but the surveyors could not explore the resource further east due to private property fences.

The current survey revisited P-37-014658 but was unable to relocate any artifacts. The area between the private property and Moreno Avenue has been completely leveled and is used by the adjacent residence for vehicle parking. A manhole cover within the site boundary suggests that the subsurface has been completely disturbed (Figure 10). The remnants of the resource may have been destroyed by roadside maintenance or collected by the local residences. Although the resource was located within the San Vicente Pipeline APE, it has been completely destroyed, so no avoidance measures will be required during adjacent project activities.

Figure 10. Evidence of ground disturbance within P-37-014658 site boundary, looking south.

P-37-014660; CA-SDI-14273

This prehistoric scatter was recorded in 1996 and contained *Chione* and pecton shell, four lithic flakes and one core. At the time of recordation, the surveyors noted that the site was subject to considerable river erosion, grading, and excavation for installation of a pipeline. The site measured 50 × 50 feet and was located in a depression between Lakeside Avenue and State Route 67.

The current survey revisited P-37-014660 but was unable to access the site due to a private fence. Through the fence, the current surveyors could see that the area has been greatly disturbed (Figure 11). The resource location is located within the San Vicente Pipeline APE but is 40 feet east of Lakeside Avenue where the pipeline trench is proposed. Review of an aerial photograph shows that the portion of the resource that falls within the APE was graded between 2010 and 2012. The resource was likely destroyed in this section of the APE at this time. Though the survey was unable to confirm its condition, the resource is easily avoidable and will not be impacted provided the adjacent project activities are limited to the existing road corridor.

Figure 11. View east beyond fence at P-37-014660 site boundary.

P-37-014661; CA-SDI-14274

This resource was originally recorded in 1996 as a prehistoric shell scatter and five lithic flakes. A site record update from 2000, however, determined that the shell was not the result of prehistoric subsistence but rather a recent product of imported bay sediments. The update also concluded that the reported flakes were the result of heavy equipment passing over rock. This

site has been determined not to be a cultural resource and requires no avoidance measures during adjacent project activities.

P-37-014961

This prehistoric isolate was recorded in 1990 and consists of a single volcanic flake. The resource is located within fenced military land and the current survey was not able to access the flake. The resource is located within the San Vicente Pipeline APE but it is protected from project activities by the well maintained fence. Additionally, isolated finds have limited data potential and are not considered eligible for listing in the NRHP nor the CRHR. No avoidance measures will be required during adjacent construction activities.

P-37-026967; CA-SDI-17652

This prehistoric resource was originally recorded in 2005 as a single milling station feature. Photographs of the single boulder suggest that the feature possessed six conical mortars. The original recorded stated that the feature appears to have been relocated to its recorded position. A 2009 site record update found the resource in the same location as originally recorded but noted extensive disturbance to the area due to construction of a park entrance.

The current survey revisited the recorded location of P-37-026967 but could not relocate the feature. It is possible that this feature was removed during the continued construction mentioned in the 2009 site record update. The recorded location of the resource is within the San Vicente Pipeline APE; however, because the resource is no longer extant, no avoidance measures will be required.

P-37-026974; CA-SDI-17656

This historic resource is the concrete road that ran through the railroad depot and town of Foster in the early twentieth century. This half-mile segment of concrete highway used to connect Julian, California, to San Diego, California, but the route was discontinued with the construction of the San Vicente Dam. This site is associated with the P-37-013629; CA-SDI-13629, the remnants of the town of Foster. A site record update in 2009 evaluated the site and stated that the condition of the road had worsened, likely from its use by heavy machinery. Due to its diminished integrity to convey its significance, the resource was recommended not significant for listing in the NRHP or the CRHR.

The current survey revisited P-37-026974 and found the road to be in diminishing condition. The original light colored concrete road with large dark rock inclusions had been cracked and repaired in many areas. Potholes and entire sections have been covered with asphalt. If the easternmost route of the proposed San Vicente Pipeline is chosen, a trench would be excavated in the historical

concrete road. Because the site has been evaluated and recommended not eligible for listing in the NRHP or CRHR, no mitigation will be required during project excavations.

5.1.3.2 San Vicente Pure Water Pipeline – In-Reservoir Alternative Terminus

Cultural resources within the San Vicente Pipeline – In-Reservoir Alternative Terminus (IRAT) APE are presented in Table 10, and are discussed following the table.

Table 10
Cultural Resources within the San Vicente Pipeline – IRAT APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-013846	Prehistoric	Bedrock milling site	No formal evaluation	Within 100 ft
P-37-015477	Prehistoric	Quartzite cobble tool	No formal evaluation	Within 100 ft

P-37-013846; CA-SDI-13846

This prehistoric milling station was originally recorded in 1993 and consists of three bedrock milling features containing ten milling slicks and an associated handstone. The site was revisited 2009 and found to be in the same condition as originally recorded.

The current survey revisited P-37-013846 and found it to be in the same condition as previously recorded in 2009. The resource is located on a hillside overlooking a paved road. This paved road is the route for the San Vicente Pipeline – IRAT trench. Though the resource is within the APE, it is separated from project activities by a steep hillside (Figure 12). The resource is easily avoidable and will not be impacted provided the adjacent construction activities are limited to the existing road corridor.

Figure 12. Steep hillside separating project activities and P-37-013846.

P-37-015477

This prehistoric isolate was recorded in 1993 as a quartzite cobble tool. Since the time of its discovery, the area in which it was located has been completely developed and graded. The current survey was unable to relocate the isolate. The resource was located within the San Vicente Pipeline – IRAT APE, but it has been completely destroyed, so no avoidance measures will be required during adjacent construction activities.

5.1.3.3 San Vicente Pure Water Pipeline – Marina Alternative Terminus

Cultural resources within the San Vicente Pipeline – Marina Alternative Terminus (MAT) APE are presented in Table 11, and are discussed following the table.

Table 11
Cultural Resources within the San Vicente Pipeline – MAT APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-013846	Prehistoric	Bedrock milling site	No formal evaluation	Within 100 ft
P-37-014119	Prehistoric	Isolated core	No formal evaluation	Within 100 ft

P-37-013846; CA-SDI-13846

This prehistoric milling station was originally recorded in 1993 and consists of three bedrock milling features containing ten milling slicks and an associated handstone. The site was revisited 2009 and found to be in the same condition as originally recorded.

The current survey revisited P-37-013846 and found it to be in the same condition as previously recorded in 2009. The resource is located on a hillside overlooking a paved road. This paved road is one possible route for the San Vicente Pipeline – MAT trench. Though the resource is within the APE, it is separated from project activities by a sheer cliff face. The resource is easily avoidable and will not be impacted provided the adjacent construction activities are limited to the existing road corridor.

P-37-014119

This prehistoric isolate was recorded in 1994 as a purple, brown aphanitic volcanic core. Since the time of its discovery, the area in which it was located has been completely developed and graded. The current survey was unable to relocate the isolate. The resource was located within the San Vicente Pipeline – MAT APE, but it has been completely destroyed, so no avoidance measures will be required during adjacent construction activities.

5.1.3.4 San Vicente Pure Water Pipeline – Tunnel Alternative Terminus

Cultural resources within the San Vicente Pipeline – Tunnel Alternative Terminus (TAT) APE are presented in Table 12, and are discussed following the table.

Table 12
Cultural Resources within the San Vicente Pipeline – TAT APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-013629	Historic	Foster rail depot	No formal evaluation	Intersects
P-37-013630	Prehistoric	Bedrock milling and a rock art panel	Recommended eligible CRHR	Intersects

Table 12
Cultural Resources within the San Vicente Pipeline – TAT APE

Site Number	Era	Description	NRHP/CRHR Eligibility	Project Proximity
P-37-026969	Historic	Glass scatter	No formal evaluation	Within 100 ft
P-37-036497	Prehistoric	Bedrock milling	Recommended not eligible	Within 100 ft

P-37-013629; CA-SDI-13629

This resource consists of the remnants of the railroad depot and city of Foster. The site was originally recorded in 1993 and three historical refuse scatters loci were identified. Additionally, the original concrete road was also recorded and was still in use at the time of recordation. A 1997 site record update relocated the three artifact loci but only identified diagnostic refuse at Locus C. Subsurface investigations including post-hole and test unit excavations identified segments of the original San Diego Cuyamaca and Eastern railroad track.

The current survey revisited P-37-013629 but was only able to relocate remnants of Locus C and the concrete road. The proposed trench for the San Vicente Pipeline – TAT is within the historical concrete road. The historic road segment of P-37-013629 has been recorded separately as P-37-026974. For a further discussion of the possible impacts to the road, please see P-37-026974. Locus C is located 40 feet west of the proposed trench in the historic road but is separated from the concrete roadbed by a dirt shoulder, barbed-wire fence, and a drainage (Figure 13). Locus C is completely avoidable and will not be impacted by project activities provided the adjacent construction activities are limited to the existing road corridor.

Figure 13. Dirt road shoulder, barbed-wire fence, and drainage separating project activities and P-37-013629.

P-37-013630; CA-SDI-13630

This prehistoric temporary camp was originally recorded in 1993 and consisted of a granite outcrop with milling features, two possible rock walled rooms, a possible pictograph of red pigment, and artifacts. The three milling features contained more than 10 slicks and the artifacts consisted of more than 100 lithic flakes, 5 ceramic fragments, and 1 mano. A 1996 site record update relocated and mapped the milling features and identified 20 brownware ceramic sherds, a pestle tip, a core, and debitage. No mention was made of the rock art but a rock wall was included on the sketch map. The site was again updated in 2000 but this time the survey identified the three milling features and the rock art panel. The rock walled shelters and artifacts were not relocated.

The recorded site boundary of P-37-013630 measures roughly 30 meters × 12.5 meters. This area encompasses a terrace of earth and granite outcrops on a steep knoll. The terrace overlooks a leveled area which has been developed and contains a house and outbuildings. A large portion of

this recorded site boundary falls within the San Vicente Pipeline – TAT APE. The proposed pipeline trench is located 80 feet south of the site; however, a proposed work area encompasses the southern portion of the resource.

The current survey revisited P-37-013630 on July 29, 2016. The resource was identified on top of the hillside terrace (Figure 14) which is located at least 12 feet above the ground surface (Figure 15). The milling features, over 100 lithic flakes, several brownware ceramic sherds, and midden soil were identified. The rock wall was not relocated during the current survey. A granite rock face was identified with red staining; however, the staining appeared to be natural and not a pictograph.

Figure 14. P-37-013630 is a hillside terrace site with milling stations (right) and midden soil.

Figure 15. Steep hillside separating project activities and P-37-013630.

P-37-026969; CA-SDI-17654

This historical refuse scatter was recorded in 2005 and consists of broken glass whiskey and beer bottles concentrated at the base of a rock. The glass bottles exhibit hand finished crown lips and are now purple due to exposure by the sun. These qualities would date the materials to the early twentieth century.

This resource is located on a steep and densely vegetated hillside. Though it is located within the San Vicente Pipeline – TAT APE, P-37-026969 is located in a section of the alignment that will be directionally drilled. The proposed drilling pit is projected 300 feet west of the resource and the underground tunnel will have no impact on the surface resource. Due to the dangerous terrain and the impossibility of the project impacting the site, the current survey did not revisit this resource. No avoidance measures will be required during adjacent construction activities provided directional drilling will be the method of pipe installation.

P-37-036497; CA-SDI-22092

This newly discovered site was identified during the current survey and contains three prehistoric milling features and an associated artifact cache (Figure 16). The milling features consist of three granite bedrock boulders with six milling slicks ranging in dimensions from 24 to 70 centimeters (Figure 17). The cache of lithic artifacts was located along the northern base of the northernmost granite boulder and appears to have been recently deposited. The cache includes three unidirectional cores, three manos, one granite hammerstone, and one metavolcanic flake. This resource was given the temporary identifier PWP-01.

P-37-036497 is located on a slight hillside overlooking a saddle between two hills that was leveled for the construction of a single-family residence. P-37-013630, another prehistoric milling site, is located 215 feet west of PWP-1 on the other side of the leveled saddle. The leveling of this saddle may have disturbed a larger site that may have prehistorically linked these two milling sites.

P-37-036497 is located within the San Vicente Pipeline – TAT APE. P-37-036497 is located in a section of the possible alignment that will be directionally drilled and the underground tunnel will have no impact on the surface resource. The proposed drilling pit, however, is proposed to be excavated within approximately 50 feet of the resource and a temporary work area is proposed within 35 feet of the resource. P-37-036497 is located on a slight hillside northeast of the pit.

Figure 16. Artifact cache located at base of Feature 1 at P-37-036497.

Figure 17. Features 2 (foreground) and 3 at P-37-036497, looking west.

5.1.3.5 Mission Trails Booster Station

No cultural resources have been identified within the Mission Trails Booster Station APE.

5.2 Archaeological Testing Results

The current survey identified two previously unevaluated cultural resources, both of which were located within the San Vicente Pipeline – TAT APE, that could have been potentially impacted by project activities: P-37-013630 and P-37-036497. Archaeological testing was conducted to gather information to determine the eligibility of these sites for listing on the NRHP or the CRHR. Since these excavations, the City has committed to avoiding impacts to these resources.

P-37-013630

Dudek archaeologists revisited P-37-013630 and conducted excavations on September 29, 2016. The entire terrace was surveyed using transects at less than 1-meter intervals. Over 100 lithic flakes were identified on the surface. Identified materials included quartz, cryptocrystalline

silicates (CCS), volcanic, and obsidian. Ten brownware sherds were also identified on the surface of the terrace. To determine the presence of a subsurface deposit, four STPs were excavated along the terrace and one 1 × 0.5 meter test unit (TU-1) was excavated within the highest concentration of surface artifacts, as shown on the DPR form in Appendix D (Figure 18). The four STPs were excavated to a depth ranging from 20 to 30 centimeters. Heavy granite boulders or bedrock prevented continued excavation in STPs 1, 3, and 4 (Figure 19). STP-2 was the most productive of the STPs and was still productive when it was abandoned at 30 centimeters depth. STP-4 was located furthest from the ground surface concentration and only produced two pieces of debitage. Dark midden soil was observed to depth in all excavation units except STP-4. TU-1 did show signs of ground disturbance in the form of modern ceramics and rusted metal found subsurface. Due to the high artifact content recovered from the first 10 centimeters excavated level of TU-1 was so productive and demonstrated a significant subsurface deposit, TU-1 was abandoned at 10 centimeters depth.

Figure 18. The north wall profile of TU-1 at 10 cmbs at P-37-013630.

Figure 19. Granite boulders or bedrock in plan view of STP-1 at P-37-013630.

P-37-036497

Dudek archaeologist revisited and conducted excavations as P-37-036497 on September 29, 2016. A 20-meter buffer surrounding the three bedrock milling features was resurveyed by Dudek archaeologist using transects at less than 1-meter intervals. Ground visibility was less than 30% due to dense grass and brush; however, one groundstone fragment was identified during the close-interval survey near Feature 1. This groundstone fragments prompted the location of STP-2. STP-3 and STP-4 were excavated 3 meters and 8 meters south of Feature 3, respectively (refer to DPR form in Appendix D). All STPs were excavated to a depth of 30 centimeters below surface (Figure 20). STP-2 produced one groundstone fragment and two pieces of debitage. All three artifacts were identified in the first 20 centimeters. STP-1, STP-3, and STP-4 produced no cultural materials and no midden soil was noted in any of the four STPs.

Figure 20. East wall profile of STP-2 at P-37-036497.

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6 ANALYSIS

The current study identified two previously unevaluated cultural resources within the San Vicente Pipeline – TAT APE that could have been potentially impacted by project activities: P-37-013630 and P-37-036497. Cataloging (Appendix F) and laboratory analysis of excavated materials were conducted to aid in the determination of the sites' eligibility for listing on the NRHP and CRHR. All artifacts collected during excavation will be curated at San Diego Archaeological Center (Section 4.4). Since this analysis, the City has committed to avoiding impacts to these resources.

6.1 P-37-013630

Debitage

Debitage constitutes the largest artifact category generated during excavations at P-37-013630 (n=224); the entire assemblage was analyzed. The results from the debitage analysis are consistent with other regional studies in that flakedstone reduction was based on expedient cobble-core reduction, rather than the more intensive prepared platform technique (see Becker and Iversen 2006; Flenniken et al. 2004; Hale 2009). The debitage assemblage from P-37-013630 is composed primarily of nondiagnostic shatter (n=129; 57.6%); as is typical in the initial stages of cobble-core reduction strategy, particularly with the reduction of harder and poorer quality raw materials. Aside from shatter, the next most common debitage type was late interior flakes at 24.6%. The remaining recovered flake types were each under 5% (Table 13). The high LWI of 0.58 indicates an expedient lithic reduction strategy.

Table 13
Frequency of Debitage by Flake Type and Material (P-37-013630)

Material	Flake Type*									Total (n)	Total (%)
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*12*		
CCS	3	3	1	7	1	1	1		13	**30**	**13.4%**
Obsidian		1		11			3		12	**27**	**12.1%**
Quartz	1			13		4	1		37	**56**	**25.0%**
Quartzite		1		1	1				4	**7**	**3.1%**
Volcanic		5	3	23	5	2	2	1	63	**104**	**46.4%**
Total (n)	**4**	**10**	**4**	**55**	**7**	**7**	**7**	**1**	**129**	**224**	**100%**
Total (%)	**1.8%**	**4.5%**	**1.8%**	**24.6%**	**3.1%**	**3.1%**	**3.1%**	**0.4%**	**57.6%**	**100%**	

Notes: CCS = cryptocrystalline silicate.
* Flake type denotations are as follows: 1 = primary decortification; 2 = secondary decortification; 3 = early interior; 4 = late interior; 5 = linear interior; 6 = early biface thinning; 7 = late biface thinning; 8 = finishing/pressure; 12 = non-diagnostic shatter.

Considering size, 91.5% of all debitage was smaller than 2 centimeters (Table 14). The great abundance of small debitage is related to the large amount of shatter that consisted of small flake

fragments (95.3% of all shatter). The large amount of small shatter is unsurprising given the high proportion of hard volcanics in the debitage assemblage; the large amount of force required to fracture these materials often leads to a large amount of shatter being produced, especially near the platform. The 8.5% of debitage that was larger than 2 centimeters consisted of a small portion of cortical and interior flakes and shatter in the assemblage.

Table 14
Frequency of Debitage by Flake Size and Material (P-37-013630)

Material	Flake Size				Total (n)	Total (%)
	1 cm	*2 cm*	*3 cm*	*4 cm*		
CCS	15	13	2		**30**	**13.4%**
Obsidian	15	12			**27**	**12.1%**
Quartz	26	27	3		**56**	**25.0%**
Quartzite	2	3	2		**7**	**3.1%**
Volcanic	41	51	10	2	**104**	**46.4%**
Total (n)	**99**	**106**	**17**	**2**	**224**	**100%**
Total (%)	**44.2%**	**47.3%**	**7.6%**	**0.9%**	**100%**	

The debitage raw material profile consists primarily of locally available raw materials, especially volcanic variants (n=104; 46.4%) and quartz (n=56; 25.0%) (Table 14). Rare or extralocal materials, such as fine-grained CCS (n=30; 13.4%) and obsidian (n=27; 12.1%), were present in smaller quantities. As expected, local raw materials had a higher proportion of shatter than extralocal materials. This is in part the result of the aforementioned physical properties of the stone (volcanic and quartz require more force to work) and partially a factor of their relative abundance; because the locally available stone is much more common, less care was taken when flaking, thereby resulting in larger amounts of shatter because the cost of the waste is not as high as with those materials that were transported over large distances. The distribution of size across material types also reflects this trend; 100.0% of all debitage larger than 3 centimeters is volcanic. Generally, exotic materials are reduced prior to their import in order to reduce the cost of transportation, resulting in smaller sized debitage in the final assemblage reflecting reworking of a higher quality material.

Bifaces

Excavations at P-37-013630 produced two projectile points, a projectile point fragment, and an obsidian biface fragment. One projectile point was identified in STP-2 within the first 20 centimeters below surface. The projectile point was manufactured from a gray volcanic and is categorized as a Cottonwood Triangular arrow point (Cat No.56; Figure 21). The specimen is complete and measures 18.75 × 11.68 × 3.47 mm. The point is asymmetrical and appears to have

been opportunistically crafted from a pointed flake that was then pressure flaked. All margins of the point are still sharp with no evidence of buffing or other hafting procedures.

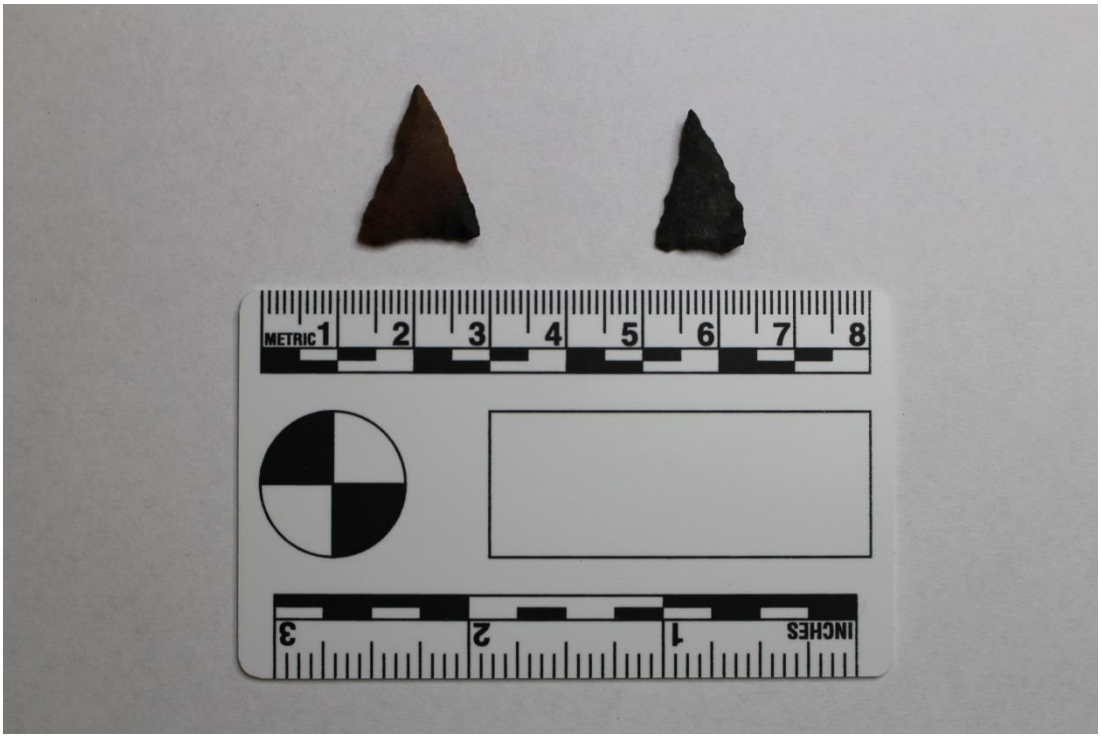

Figure 21. P-37-013630 Projectile Points: Cat No. 013, TU-1, 0-10 cmbs, Cottonwood Triangular (left); Cat No. 056, STP-2, 0-20 cmbs, Cottonwood Triangular (right).

The second projectile point was recovered from Quad A of TU-1 within the first 10 centimeters below surface. The complete projectile point is categorized as a Cottonwood Triangular arrow point and measures 20.96 × 16.04 × 3.12 mm (Cat No.13; Figure 21). The projectile point was manufactured by means of pressure flaking a thin tabular chert flake. All margins of the point are sharp with no evidence of buffing or other hafting procedures.

The projectile point fragment was recovered from Quad B of TU-1 within the first 10 centimeters below surface. This white quartz point is categorized as a Cottonwood Triangular arrow point and measures 16.87 × 15.93 × 4.92 mm (Cat No.33; Figure 22). A lateral fracture extending diagonally across the white quartz point removed the distal tip of the projectile point. The fracture is not an impact hinge fracture nor is there any evidence of hafting, suggesting that this point was fractured during manufacturing and discarded.

The other biface is the lateral margin of a late-stage biface fragment (Cat No. 87) recovered from the first 10 centimeters of Quad A of TU-1. The lateral, bifacially worked margin measures 6.50 mm long and the fragment is 9.66 mm wide and 2.64 mm thick. The biface was produced from a finely worked, late-stage obsidian biface.

Figure 22. P-37-013630 Cat No. 033, TU-1, 0-10 cmbs, projectile point base.

Groundstone

A single groundstone tool was recorded from P-37-013630 during excavations; a handstone fragment (Figure 23). The tool fragment consists primarily of a handstone margin but two warn facets are discernable. A portion of the handstone's edge is also present and there is evidence of pecking and fire-affect. Though limited information can be ascertained from a single fragmented artifact, the tool does suggest that fair to moderate processing took place at P-37-013630.

Figure 23. P-37-013630 Cat No. 071, STP-3, 0-20 cmbs, handstone fragment.

Ceramics

A total of 29 ceramic sherds were recovered from the excavations at P-37-013630. A basic macroscopic visual analysis was performed to differentiate the traditionally defined buff and brown ware. Differentiating between brown wares macroscopically is difficult at best, and even low-powered magnification has been shown to be much less accurate than microscopic analysis (Gallucci 2004; Hildebrand et al. 2002).

All recovered sherds are brown ware. Under the more traditional classification, i.e., not differentiating brown wares based on amphibole, all sherds in the assemblage would have fallen under Tizon Brown. The absence of buff ware is to be expected, given its origin in the desert and that it generally comprises a decreasing percentage of ceramic assemblages in western parts of San Diego County. Given the presumed provenance of Salton Brown ware in the Salton Trough (Hildebrand et al. 2002), it is likely that, if present, it only comprises a small percentage of the overall assemblage.

Of the 29 sherds only one exhibits evidence of burning while 11 of the sherds are thicker than 5.0 mm, possibly representing cooking vessels. The others are thinner walled vessels. Two rim sherds were identified, one of which, Cat. No. 57, showing evidence of possible modification (Figure 24). Five faint vertical incisions are visible on Cat. No. 57 and these incisions are crossed diagonally by four incisions. This creates a diamond shaped cross-hatch pattern.

Although the ceramic assemblage was not subjected to a full compositional analysis along the lines of a thin-section analysis, some variation could still be discerned. Beyond the presence/absence of amphibole, the typical brownware variation in the abundance, sorting, and angularity of quartz was noted. The typical variation in fabric colors was also noted, with red-brown, brown and grey-brown represented. If one assumes that the macroscopic variation is consistent with other sites in San Diego, microscopic analysis would likely identify even greater variation in fabric groups within this limited assemblage.

Figure 24: P-37-013630 Cat No. 017, TU-1, 0-10 cmbs, rim sherd (right); Cat No. 057, STP-2, 20-30 cmbs, rim sherd (left). Note incisions on Cat No. 057.

Faunal Analysis

A total of 86 pieces of vertebrate remains (22.1 g) were recovered during excavation. The majority of the bone, 49 fragments, was recovered from STP-2. Analysis of vertebrate remains identified 24 fragments showing evidence of burning to varying degrees, most of which, 14, were recovered from STP-2. One bone fragment showed signs of modification in the form of a saw-cut edge. This bone is bovine-sized and is likely associated with the adjacent home and is evidence of site disturbance. Only a single complete bone specimen, a rodent long bone, was identified and its condition suggests that it was deposited non-culturally. The remaining assemblage is highly fragmentary. Except for six bone fragments, none of the specimens are larger than 2 centimeters and only the one complete rodent long-bone contains diagnostic features which might identify it to the family level or better. All remaining specimens are too small to identify to any level. Although a few of the specimens have recent breaks, all of them were likely broken into small pieces prior to deposition. Fifty-six (56) specimens are consistent with the general morphology of small mammals (rodent), fifteen specimens are consistent with medium-sized mammals (rabbit, hare), two specimens are likely from large mammals such as bovine or deer, and two small reptile vertebrae were also identified. The two large mammal bone specimens were not morphologically consistent with human osteology. The presence of a saw-cut edge on one of the large mammal bones further supports the assertion that the bones are not human. The Native American monitor present during the excavation, Tuchon Phoenix of Red Tail Monitoring and Research Inc, concurred that the bone was not human.

Highly fragmentary faunal assemblages like this are typical throughout San Diego (Arter 2013; Arter and Roeder 2010). This generally results from processing and consumption practices, whereby small mammals were pounded and crushed with groundstone tools and consumed as a mix of meat, bone, and skin (Shipek 1991).

6.2 P-37-036497

Excavation of four STPs at P-37-036497 produced only four artifacts, all from STP-02. Three of the artifacts consist of debitage removed from the same grey volcanic raw material. The debitage consists of a late cortical percussion flake, an early interior percussion flake, and a piece of shatter. This small lithic assemblage is consistent with an expedient cobble-core reduction or assay.

The fourth artifact identified during the excavation of STP-02 consists of a single groundstone handstone fragment. The tool fragment consists primarily of a handstone margin but one worn facet is discernible. The facet is well worn and the margin shows signs of pecking. Though limited information can be ascertained from a single fragmented artifact, the tool does suggest that fair to moderate processing took place at P-37-036497.

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7 MANAGEMENT CONSIDERATIONS

7.1 Resource Evaluation

The current study identified two previously unevaluated cultural resources that are located within the North City Project APE that could have been potentially impacted by project activities: P-37-013630 and P-37-036497. Archaeological testing and laboratory analysis were conducted to determine the eligibility of these sites for listing on the NRHP or the CRHR. Since this evaluation, the City has committed to avoiding impacts to these resources.

P-37-013630

This prehistoric temporary camp is located on a hillside terrace that consists of bedrock milling features, midden soil, and surface artifacts including over 100 lithic flakes and several brownware ceramic sherds. As described in Sections 5.2 and 6, P-37-013630 was evaluated through additional close-interval survey and excavation of four STPs and a STU. The excavations demonstrated a continuation of midden soil to bedrock and produced 224 pieces of debitage, 4 lithic bifaces, 29 ceramic sherds, 86 vertebrate remains, and a handstone fragment. Considering the high yield compared to the low volume (0.2 m^3) of the excavation units, archaeological testing demonstrated that P-37-013630 has a significant subsurface archaeological deposit. Further research of P-37-013630 is likely to yield information important in prehistory and, as such, Dudek recommends P-37-013630 eligible for listing on the NRHP and the CRHR under criteria D and 4, respectively. No information was obtained about this site indicating its significance under NRHP criteria A through C or CRHR criteria 1 through 3. The site was not found to be associated with significant events (Criterion A, 1), or persons (Criterion B, 2), and no evidence suggests that it qualifies as the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C, 3).

P-37-036497

This prehistoric milling site consisting of three bedrock features with six milling slicks. As described in Sections 5 and 6, PWP was evaluated through additional close-interval survey and excavation of four STPs. Excavation of the STPs produced three pieces of debitage and one groundstone fragment. Further excavations at P-37-036497 are unlikely to yield information important to prehistory. Dudek recommends the P-37-036497 not eligible for listing on the NRHP or the CRHR under Criterion D, 4, respectively. Moreover, no information was obtained about this site indicating its significance under NRHP criteria A through C or CRHR criteria 1 through 3. The site was not found to be associated with significant events (Criterion A, 1), or persons (Criterion B, 2), and no evidence

suggests that it qualifies as the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction (Criterion C, 3).

7.2 Resource Management

This cultural resource inventory was conducted to identify all cultural resources located within the North City Project APE. This inventory will assist the City in managing the cultural resources throughout the construction of the proposed North City Project. Because avoidance is the preferred method of managing resources, the current survey focused on the proximity of resources to each proposed project component. Though 37 resources are located within the APE, all can be avoided. Table 15 summarizes the findings, including project component, resource proximity, current evaluation status, and recommended management measures for each cultural resource within the North City Project APE.

All identified archaeological resources will be avoided. Therefore, regarding archaeological resources, under Section 106 of the NRHP, the Project will have no effect to historic properties. Under CEQA, the Project will have no significant impacts to historical resources. Effects to historical built environment resources are discussed in a separate report.

As described in Section 5, 1 newly discovered and 37 previously recorded resources have been identified within the North City Project APE. Of these 38 resources, analysis of site records and the current survey have confirmed that 11 are no longer extant. Site visits indicate that these resources have been collected or demolished for the construction of residential neighborhoods, a school, roads, railroads, a cemetery, and the MBC. Additionally, there is 1 cultural resource within the APE that will be impacted by proposed North City Project activities; however, this resource has been previously recommended not eligible for listing in the NRHP or the CRHR. One previously recorded resource was determined to have never been a cultural resource. Nine resources within the North City Project APE are isolates which are not considered eligible for listing in the NRHP or CRHR. These 22 demolished sites and insignificant isolates will not require any management considerations during the construction of the North City Project.

The remaining 17 cultural resources identified within the North City Project APE will require management consideration in the form of avoidance measures. Twelve sites are located within the North City Project APE and adjacent to proposed pipeline installation within the existing paved roads. However, these resources are avoidable, as they are located beyond barriers that would protect them from project impacts, including private fences, steep slopes, or drainages. Three additional resources are located within the APE, but the pipeline is being installed using directional drilling far below the surface in these areas and will not impact the resources. These

17 cultural resources located within the North City Project APE can be avoided using limited protection measures. Protection measures include establishing work limits, marking environmentally sensitive areas (ESAs) with signage, and worker training. Collaboration with project engineers and construction specialists will ensure that the City and consulting archaeologists fully understand the possible impacts that each construction activity presents so that the best protection measures can be implemented for each site.

Prior to refinements of the North City Project engineering, it appeared that two unevaluated resources identified within the North City Project APE may have been impacted during construction. Previously identified P-37-013630 and newly discovered P-37-036497 are both located adjacent to the San Vicente Pipeline – TAT APE.

P-37-036497 is a prehistoric milling site consisting of three bedrock features with six milling slicks. A proposed drilling pit is proposed to be excavated within approximately 50 feet of the resource and a temporary work area is proposed within 35 feet of the resource. As described previously in this section, Dudek recommends the P-37-036497 not eligible for listing on the NRHP or the CRHR.

P-37-013630 is a prehistoric temporary camp located on a hillside terrace that consists of bedrock milling features, midden soil, and an artifact. P-37-013630 is located within a proposed staging area for the San Vicente Pipeline – TAT APE. As described previously in this section, Dudek recommends P-37-013630 eligible for listing on the NRHP or the CRHR under criteria D and 4, respectively. Though within a proposed staging area, P-37-013630 is located on top of the hillside terrace which is located at least 12 feet above the ground surface. Since the evaluation, the City has committed to avoiding these resources. Thus, the current project will not impact any known resources.

Table 15
Resource Summary Table

Site Number	Era	Description	NRHP/CRHR Eligibility	North City Project Component	Project Proximity	Management Recommendation
CR 450	Historic	Scripps-Meanley Ranch	SD Register of Historic Resources	North City Pipeline	Within 100 ft	Avoidance
NCAWPF-IF-1	Prehistoric	Isolated quartzite core	No formal evaluation	NCPWF	Intersects	None – isolate
NCAWPF-IF-2	Prehistoric	Isolated metavolcanic flake	No formal evaluation	NCPWF	Intersects	None – isolate
NCAWPF-IF-3	Prehistoric	Isolated quartzite flake	No formal evaluation	NCPWF	Intersects	None – isolate
P-37-004505	Prehistoric	Pictograph panel, lithic scatter, and rock pile	No formal evaluation	San Vicente Pipeline	Within 100 ft	Avoidance
P-37-006660	Historic	San Diego Mission Flume segment	No formal evaluation	San Vicente Pipeline	Within 100 ft	Avoidance
P-37-009117	Historic	WWII training camp remnants	No formal evaluation	San Vicente Pipeline	Within 100 ft	Avoidance
P-37-011077	Prehistoric	Bedrock milling feature	No formal evaluation	San Vicente Pipeline	Within 100 ft	Avoidance
P-37-011459	Prehistoric	Lithic and groundstone scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft	None – no longer extant
P-37-011611	Prehistoric	Lithic quarry	No formal evaluation	San Vicente Pipeline	Within 100 ft	Avoidance
P-37-011612	Prehistoric	Lithic artifact scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft	Avoidance
P-37-011761	Historic	Concrete cistern	No formal evaluation	San Vicente Pipeline	Within 100 ft	None – no longer extant
P-37-012138	Prehistoric	Shell midden and fire affected rock	No formal evaluation	MBC	Intersects	None – no longer extant
P-37-012139	Prehistoric	Lithic scatter	No formal evaluation	MBC	Intersects	None – no longer extant
P-37-012408	Prehistoric	Lithic scatter	6Y	Landfill Gas Line; San Vicente Pipeline	Intersects	None – no longer extant
P-37-012439	Prehistoric	Artifact scatter	6Y	Landfill Gas Line; San Vicente Pipeline	Intersects	None – no longer extant
P-37-012453	Multicomponent	Shell, lithics, and historic glass scatter	No formal evaluation	Morena Pipelines	Within 100 ft	None – no longer extant

Table 15
Resource Summary Table

Site Number	Era	Description	NRHP/CRHR Eligibility	North City Project Component	Project Proximity	Management Recommendation
P-37-013629	Historic	Foster rail depot remnants	No formal evaluation	San Vicente Pipeline – TAT	Intersects	Avoidance
P-37-013630	Prehistoric	Bedrock milling and a rock art panel	Recommended eligible CRHR	San Vicente Pipeline – TAT	Intersects	Avoidance
P-37-013651	Prehistoric	Milling and artifact scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft	Avoidance
P-37-013846	Prehistoric	Bedrock milling site	No formal evaluation	San Vicente Pipeline – IRAT; San Vicente Pipeline – MAT	Within 100 ft	Avoidance
P-37-014119	Prehistoric	Isolated core	No formal evaluation	San Vicente Pipeline – MAT	Within 100 ft	None – isolate
P-37-014654	Multicomponent	Marine shell scatter and rock retaining wall	No formal evaluation	San Vicente Pipeline	Intersects	Avoidance
P-37-014655	Prehistoric	Milling artifact scatter	No formal evaluation	San Vicente Pipeline	Intersects	None – no longer extant
P-37-014656	Prehistoric	Milling artifact scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft	None – no longer extant
P-37-014657	Prehistoric	Artifact and marine shell scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft	Avoidance
P-37-014658	Prehistoric	Lithic and groundstone scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft	None – no longer extant
P-37-014660	Prehistoric	Lithic and marine shell scatter	No formal evaluation	San Vicente Pipeline	Within 100 ft	Avoidance
P-37-014661	Prehistoric	Marine shell and flake scatter	No formal evaluation	San Vicente Pipeline	Intersects	None – not a site
P-37-014961	Prehistoric	Isolated flake	No formal evaluation	San Vicente Pipeline	Within 100 ft	None – isolate
P-37-014981	Prehistoric	Isolated flake and core	No formal evaluation	Landfill Gas Line	Intersects	None – isolate
P-37-015477	Prehistoric	Quartzite cobble tool	No formal evaluation	San Vicente Pipeline – IRAT	Within 100 ft	None – isolate
P-37-018327	Prehistoric	Shell and lithic scatter	No formal evaluation	Miramar WTP	Intersects	Avoidance
P-37-026967	Prehistoric	Bedrock milling	No formal evaluation	San Vicente Pipeline	Within 100 ft	None – no longer extant
P-37-026969	Historic	Glass scatter	No formal evaluation	San Vicente Pipeline – TAT	Within 100 ft	Avoidance
P-37-026974	Historic	Concrete road	6Z	San Vicente Pipeline	Intersects	None – not significant

Table 15
Resource Summary Table

Site Number	Era	Description	NRHP/CRHR Eligibility	North City Project Component	Project Proximity	Management Recommendation
P-37-035477	Prehistoric	Isolated lithic flake	No formal evaluation	Morena Pipelines	Intersects	None – isolate
P-37-035478	Prehistoric	Isolated lithic flake	No formal evaluation	Morena Pipelines	Within 100 ft	None – isolate
P-37-036497	Prehistoric	Bedrock milling	Recommended not eligible	San Vicente Pipeline – TAT	Within 100 ft	Avoidance

7.3 Mitigation Measures

Although all currently known cultural resources will be avoided, mitigation measures were developed to reduce the potential adverse effect/significant impact to previously undiscovered cultural resources. This study was completed in compliance with federal, state, and local regulations. Separate mitigation measures are not required. Rather, each mitigation measure has been design to fulfill the requirements of Section 106 of the NHPA, CEQA guidelines, and the City of San Diego Historic Resource Guidelines. The City of San Diego will be the lead agency implementing cultural resource mitigation measures and will provide information to Bureau of Reclamation for their ongoing Section 106 oversight and consultation obligations. The interagency relationship shall be detailed in a Cultural Resources Monitoring and Treatment Plan, specified in mitigation measure MM-CR-1, below.

Implementation of the following mitigation measures will reduce potential adverse effects/significant impacts to cultural resources to a level below significance:

MM-CR-1: Cultural Resources Monitoring and Treatment Plan (CRMTP)

I. Prior to Start of Construction

A. Preparation of CRMTP

1. Prior to the start of construction, the Principal Investigator (PI) archaeologist shall prepare a CRMTP that specifies and describes:

- the cultural resources Area of Potential Effect (APE)
- the chains of authority and communication, including inter-agency relationships for the purposes of compliance with Section 106 of the NHPA, CEQA, and City of San Diego Historic Resource Guidelines
- roles and responsibilities
- construction monitoring methods
- reporting protocol
- avoidance and protective measures for cultural resources
- procedures for evaluating resource significance and/or data recovery for significant resources that cannot be avoided (known and unanticipated discoveries)
- consultation obligations and timelines for providing feedback
- post construction requirements

2. The PI will prepare the draft CRMTP and submit to the City of San Diego Point of Contact who will then distribute to interagency contacts, as appropriate for review and to facilitate stakeholder consultation obligations.

MM-CR-2: Avoidance

The following shall be implemented to protect known archaeological resources that have not been evaluated for significance or that have been evaluated as significant under Section 106 and CEQA:

I. Prior to Start of Construction

A. Identified cultural resources that have not been evaluated for significance or that have been evaluated as significant under Section 106 of the NHPA and CEQA, will be avoided through project design. These include resources that were either found outside of the work limits or for which significance evaluation did not identify significant archaeological deposits within the work limits.

1. Prior to the start of construction, the Principal Investigator (PI) archaeologist shall ensure that resource-specific avoidance measures are implemented to prevent unanticipated impacts. These measures may include exclusionary fencing, ESA signage, or other measures deemed appropriate and as specified in the CRMTP.

2. Only one resource, P-37-013630, overlaps the impact area. This resource was evaluated and a small portion of the site located on a rocky knoll was identified as significant under Criterion D of Section 106 and Criterion 4 of CEQA. The remainder of the site area did not contain significant deposits. Therefore, avoidance of significant impacts/adverse effects to this resource will include exclusion of construction related activities within or immediately near to the area containing significant deposits.

MM-CR-3: Construction Monitoring

The following shall be implemented to protect unknown archaeological resources and/or grave sites that may be identified during project construction phases.

I. Prior to Permit Issuance or Bid Opening/Bid Award

A. Entitlements Plan Check

1. Prior to permit issuance or Bid Opening/Bid Award, whichever is applicable, the Assistant Deputy Director (ADD) Environmental designee shall verify that the requirements for Archaeological Monitoring and Native American monitoring have been noted on the applicable construction documents through the plan check process.

B. Letters of Qualification have been submitted to ADD

1. Prior to Bid Award, the applicant shall submit a letter of verification to Mitigation Monitoring Coordination (MMC) identifying the Principal Investigator (PI) for the project and the names of all persons involved in the archaeological monitoring program, as defined in the City of San Diego Historical Resources Guidelines (HRG). If applicable, individuals involved in the archaeological monitoring program must have completed the 40-hour HAZWOPER training with certification documentation.
2. MMC will provide a letter to the applicant confirming the qualifications of the PI and all persons involved in the archaeological monitoring of the project meet the qualifications established in the HRG.
3. Prior to the start of work, the applicant must obtain written approval from MMC for any personnel changes associated with the monitoring program.

II. Prior to Start of Construction

A. Verification of Records Search

1. The PI shall provide verification to MMC that a site specific records search (1/4 mile radius) has been completed. Verification includes, but is not limited to a copy of a confirmation letter from South Coastal Information Center, or, if the search was in-house, a letter of verification from the PI stating that the search was completed.
2. The letter shall introduce any pertinent information concerning expectations and probabilities of discovery during trenching and/or grading activities.
3. The PI may submit a detailed letter to MMC requesting a reduction to the ¼ mile radius.

B. PI Shall Attend Precon Meetings

1. Prior to beginning any work that requires monitoring; the Applicant shall arrange a Precon Meeting that shall include the PI, Native American consultant/monitor (where Native American resources may be impacted), Construction Manager (CM) and/or Grading Contractor, Resident Engineer (RE), Building Inspector (BI), if appropriate, and MMC. The qualified Archaeologist and Native American Monitor shall attend any grading/excavation related Precon Meetings to make comments and/or suggestions concerning the Archaeological Monitoring program with the Construction Manager and/or Grading Contractor.
    a. If the PI is unable to attend the Precon Meeting, the Applicant shall schedule a focused Precon Meeting with MMC, the PI, RE, CM or BI, if appropriate, prior to the start of any work that requires monitoring.

2. Acknowledgement of Responsibility for Curation (Capital Improvement Project or Other Public Projects)

    a. The applicant shall submit a letter to MMC acknowledging their responsibility for the cost of curation associated with all phases of the archaeological monitoring program.

3. Identify Areas to be Monitored

    a. Prior to the start of any work that requires monitoring, the PI shall submit an Archaeological Monitoring Exhibit (AME) (with verification that the AME has been reviewed and approved by the Native American consultant/monitor when Native American resources may be impacted) based on the appropriate construction documents (reduced to 11x17) to MMC identifying the areas to be monitored including the delineation of grading/excavation limits.

    b. The AME shall be based on the results of a site specific records search as well as information regarding the age of existing pipelines, laterals and associated appurtenances and/or any known soil conditions (native or formation).

    c. MMC shall notify the PI that the AME has been approved.

4. When Monitoring Will Occur

    a. Prior to the start of any work, the PI shall also submit a construction schedule to MMC through the RE indicating when and where monitoring will occur.

    b. The PI may submit a detailed letter to MMC prior to the start of work or during construction requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final construction documents which indicate conditions such as age of existing pipe to be replaced, depth of excavation and/or site graded to bedrock, etc., which may reduce or increase the potential for resources to be present.

5. Approval of AME and Construction Schedule

    After approval of the AME by MMC, the PI shall submit to MMC written authorization of the AME and Construction Schedule from the CM.

III. During Construction

A. Monitor Shall be Present During Grading/Excavation/Trenching

1. The Archaeological Monitor shall be present full-time during all soil disturbing and grading/excavation/trenching activities which could result in impacts to archaeological resources as identified on the AME. **The Construction Manager is responsible for notifying the RE, PI, and MMC of changes to any**

construction activities such as in the case of a potential safety concern within the area being monitored. In certain circumstances OSHA safety requirements may necessitate modification of the AME.

2. The Native American consultant/monitor shall determine the extent of their presence during soil disturbing and grading/excavation/trenching activities based on the AME and provide that information to the PI and MMC. If prehistoric resources are encountered during the Native American consultant/monitor's absence, work shall stop and the Discovery Notification Process detailed in Section III.B-C and IV.A-D shall commence.
3. The PI may submit a detailed letter to MMC during construction requesting a modification to the monitoring program when a field condition such as modern disturbance post-dating the previous grading/trenching activities, presence of fossil formations, or when native soils are encountered that may reduce or increase the potential for resources to be present.
4. The archaeological and Native American consultant/monitor shall document field activity via the Consultant Site Visit Record (CSVR). The CSVR's shall be faxed by the CM to the RE the first day of monitoring, the last day of monitoring, monthly (Notification of Monitoring Completion), and in the case of ANY discoveries. The RE shall forward copies to MMC.

B. Discovery Notification Process

1. In the event of a discovery, the Archaeological Monitor shall direct the contractor to temporarily divert all soil disturbing activities, including but not limited to digging, trenching, excavating or grading activities in the area of discovery and in the area reasonably suspected to overlay adjacent resources and immediately notify the RE or CM, as appropriate.
2. The Monitor shall immediately notify the PI (unless Monitor is the PI) of the discovery.
3. The PI shall immediately notify MMC by phone of the discovery, and shall also submit written documentation to MMC within 24 hours by fax or email with photos of the resource in context, if possible.
4. No soil shall be exported off-site until a determination can be made regarding the significance of the resource specifically if Native American resources are encountered.

C. Determination of Significance

1. The PI and Native American consultant/monitor, where Native American resources are discovered shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section IV below.

   a. The PI shall immediately notify MMC by phone to discuss significance determination and shall also submit a letter to MMC indicating whether additional mitigation is required.

   b. If the resource is significant, the PI shall submit an Archaeological Data Recovery Program (ADRP) and obtain written approval of the program from MMC, CM and RE. ADRP and any mitigation must be approved by MMC, RE and/or CM before ground disturbing activities in the area of discovery will be allowed to resume. **Note: If a unique archaeological site is also an historical resource as defined in CEQA Section 15064.5, then the limits on the amount(s) that a project applicant may be required to pay to cover mitigation costs as indicated in CEQA Section 21083.2 shall not apply.**

      (1) Note: For pipeline trenching and other linear projects in the public Right-of-Way, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."

   c. If the resource is not significant, the PI shall submit a letter to MMC indicating that artifacts will be collected, curated, and documented in the Final Monitoring Report. The letter shall also indicate that that no further work is required.

      (1) Note: For Pipeline Trenching and other linear projects in the public Right-of-Way, if the deposit is limited in size, both in length and depth; the information value is limited and is not associated with any other resource; and there are no unique features/artifacts associated with the deposit, the discovery should be considered not significant.

      (2) Note, for Pipeline Trenching and other linear projects in the public Right-of-Way, if significance cannot be determined, the Final Monitoring Report and Site Record (DPR Form 523A/B) shall identify the discovery as Potentially Significant.

D. Discovery Process for Significant Resources - Pipeline Trenching and other Linear Projects in the Public Right-of-Way

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities or for other linear project types within

the Public Right-of-Way including but not limited to excavation for jacking pits, receiving pits, laterals, and manholes to reduce impacts to below a level of significance:

1. Procedures for documentation, curation and reporting

    a. One hundred percent of the artifacts within the trench alignment and width shall be documented in-situ, to include photographic records, plan view of the trench and profiles of side walls, recovered, photographed after cleaning and analyzed and curated. The remainder of the deposit within the limits of excavation (trench walls) shall be left intact.

    b. The PI shall prepare a Draft Monitoring Report and submit to MMC via the RE as indicated in Section VI-A.

    c. The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) the resource(s) encountered during the Archaeological Monitoring Program in accordance with the City's HRG. The DPR forms shall be submitted to the South Coastal Information Center for either a Primary Record or SDI Number and included in the Final Monitoring Report.

    d. The Final Monitoring Report shall include a recommendation for monitoring of any future work in the vicinity of the resource.

IV. Discovery of Human Remains

If human remains are discovered, work shall halt in that area and no soil shall be exported off-site until a determination can be made regarding the provenance of the human remains; and the following procedures as set forth in CEQA Section 15064.5(e), the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) shall be undertaken:

A. Notification

1. Archaeological Monitor shall notify the RE or BI as appropriate, MMC, and the PI, if the Monitor is not qualified as a PI. MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS) of the Development Services Department to assist with the discovery notification process.

2. The PI shall notify the Medical Examiner after consultation with the RE, either in person or via telephone.

B. Isolate discovery site

1. Work shall be directed away from the location of the discovery and any nearby area reasonably suspected to overlay adjacent human remains until a

determination can be made by the Medical Examiner in consultation with the PI concerning the provenience of the remains.

2. The Medical Examiner, in consultation with the PI, will determine the need for a field examination to determine the provenience.
3. If a field examination is not warranted, the Medical Examiner will determine with input from the PI, if the remains are or are most likely to be of Native American origin.

C. If Human Remains **ARE** determined to be Native American

1. The Medical Examiner will notify the Native American Heritage Commission (NAHC) within 24 hours. By law, **ONLY** the Medical Examiner can make this call.
2. NAHC will immediately identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information.
3. The MLD will contact the PI within 24 hours or sooner after the Medical Examiner has completed coordination, to begin the consultation process in accordance with CEQA Section 15064.5(e), the California Public Resources and Health & Safety Codes.
4. The MLD will have 48 hours to make recommendations to the property owner or representative, for the treatment or disposition with proper dignity, of the human remains and associated grave goods.
5. Disposition of Native American Human Remains will be determined between the MLD and the PI, and, if:
    a. The NAHC is unable to identify the MLD, OR the MLD failed to make a recommendation within 48 hours after being notified by the Commission, OR;
    b. The landowner or authorized representative rejects the recommendation of the MLD and mediation in accordance with PRC 5097.94 (k) by the NAHC fails to provide measures acceptable to the landowner, THEN
    c. To protect these sites, the landowner shall do one or more of the following:
        (1) Record the site with the NAHC;
        (2) Record an open space or conservation easement; or
        (3) Record a document with the County.
    d. Upon the discovery of multiple Native American human remains during a ground disturbing land development activity, the landowner may agree that additional conferral with descendants is necessary to consider culturally appropriate treatment of multiple Native American human remains. Culturally

appropriate treatment of such a discovery may be ascertained from review of the site utilizing cultural and archaeological standards. Where the parties are unable to agree on the appropriate treatment measures the human remains and items associated and buried with Native American human remains shall be reinterred with appropriate dignity, pursuant to Section 5.c., above.

D. If Human Remains are **NOT** Native American

1. The PI shall contact the Medical Examiner and notify them of the historic era context of the burial.
2. The Medical Examiner will determine the appropriate course of action with the PI and City staff (PRC 5097.98).
3. If the remains are of historic origin, they shall be appropriately removed and conveyed to the San Diego Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant/landowner, any known descendant group, and the San Diego Museum of Man.

V. Night and/or Weekend Work

A. If night and/or weekend work is included in the contract

1. When night and/or weekend work is included in the contract package, the extent and timing shall be presented and discussed at the precon meeting.
2. The following procedures shall be followed.

a. No Discoveries

In the event that no discoveries were encountered during night and/or weekend work, the PI shall record the information on the CSVR and submit to MMC via fax by 8AM of the next business day.

b. Discoveries

All discoveries shall be processed and documented using the existing procedures detailed in Sections III - During Construction, and IV – Discovery of Human Remains. Discovery of human remains shall always be treated as a significant discovery.

c. Potentially Significant Discoveries

If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section III - During Construction and IV-Discovery of Human Remains shall be followed.

d. The PI shall immediately contact the RE and MMC, or by 8AM of the next business day to report and discuss the findings as indicated in Section III-B, unless other specific arrangements have been made.

B. If night and/or weekend work becomes necessary during the course of construction

1. The Construction Manager shall notify the RE, or BI, as appropriate, a minimum of 24 hours before the work is to begin.

2. The RE, or BI, as appropriate, shall notify MMC immediately.

C. All other procedures described above shall apply, as appropriate.

VI. Post Construction

A. Submittal of Draft Monitoring Report

1. The PI shall submit two copies of the Draft Monitoring Report (even if negative), prepared in accordance with the HRG (Appendix C/D) which describes the results, analysis, and conclusions of all phases of the Archaeological Monitoring Program (with appropriate graphics) to MMC via the RE for review and approval within 90 days following the completion of monitoring. **It should be noted that if the PI is unable to submit the Draft Monitoring Report within the allotted 90-day timeframe as a result of delays with analysis, special study results or other complex issues, a schedule shall be submitted to MMC establishing agreed due dates and the provision for submittal of monthly status reports until this measure can be met.**

a. For significant archaeological resources encountered during monitoring, the ADRP or Pipeline Trenching Discovery Process shall be included in the Draft Monitoring Report.

b. Recording Sites with State of California Department of Parks and Recreation

The PI shall be responsible for recording (on the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B) any significant or potentially significant resources encountered during the Archaeological Monitoring Program in accordance with the City's HRG, and submittal of such forms to the South Coastal Information Center with the Final Monitoring Report.

2. MMC shall return the Draft Monitoring Report to the PI via the RE for revision or, for preparation of the Final Report.

3. The PI shall submit revised Draft Monitoring Report to MMC via the RE for approval.

4. MMC shall provide written verification to the PI of the approved report.

5. MMC shall notify the RE or BI, as appropriate, of receipt of all Draft Monitoring Report submittals and approvals.

B. Handling of Artifacts

1. The PI shall be responsible for ensuring that all cultural remains collected are cleaned and catalogued

2. The PI shall be responsible for ensuring that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; that faunal material is identified as to species; and that specialty studies are completed, as appropriate.

C. Curation of artifacts: Accession Agreement and Acceptance Verification

1. The PI shall be responsible for ensuring that all artifacts associated with the survey, testing and/or data recovery for this project are permanently curated with an appropriate institution. This shall be completed in consultation with MMC and the Native American representative, as applicable.

2. When applicable to the situation, the PI shall include written verification from the Native American consultant/monitor indicating that Native American resources were treated in accordance with state law and/or applicable agreements. If the resources were reinterred, verification shall be provided to show what protective measures were taken to ensure no further disturbance occurs in accordance with Section IV – Discovery of Human Remains, Subsection C.

3. The PI shall submit the Accession Agreement and catalogue record(s) to the RE or BI, as appropriate for donor signature with a copy submitted to MMC.

4. The RE or BI, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.

5. The PI shall include the Acceptance Verification from the curation institution in the Final Monitoring Report submitted to the RE or BI and MMC.

D. Final Monitoring Report(s)

1. The PI shall submit one copy of the approved Final Monitoring Report to the RE or BI as appropriate, and one copy to MMC (even if negative), within 90 days after notification from MMC of the approved report.

2. The RE shall, in no case, issue the Notice of Completion until receiving a copy of the approved Final Monitoring Report from MMC which includes the Acceptance Verification from the curation institution.

CR-4 Post-Review Treatment for Unanticipated Effects to Known Resources

The following shall be implemented to mitigate adverse effects/significant impacts to known avoided archaeological resources when avoidance becomes infeasible.

I. Prior to Construction-Related Impacts

A. Significance Evaluation and Treatment

1. For known avoided archaeological resources that have not been evaluated for significance under Section 106 and CEQA, and that, after final design cannot be avoided during construction, the significance evaluation and treatment procedures discussed in Section III.C of MM-CR-1 must be followed.

B. Data Recovery

1. For known archaeological resources that have been evaluated as significant under Section 106 or CEQA, and that, after final design cannot be avoided during construction, then the data recovery procedures discussed in Section III.B of MM-CR-1 must be followed.

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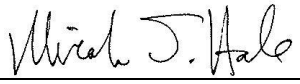
9 CERTIFICATION

Preparer: Micah Hale, PhD, RPA	**Title:** Archaeologist
Signature: 	**Date:** September 1, 2017

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APPENDIX A

Project Personnel Qualification

APPENDIX B (CONFIDENTIAL)

Records Search Documents

APPENDIX C

NAHC Sacred Lands File Search Results and Tribal Correspondence

APPENDIX D (CONFIDENTIAL)

New DPR Site Records and Updates

APPENDIX E (CONFIDENTIAL)

Resources in APE Maps

APPENDIX F

Artifact Catalog