Appendix E
ARCHAEOLOGICAL RESOURCES ANALYSIS

ARCHAEOLOGICAL RESOURCES ANALYSIS
FOR
THE MASTER STORM WATER SYSTEM MAINTENANCE PROGRAM
SAN DIEGO, CALIFORNIA
PROJECT NO. 42891

Submitted to:

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February 2008
Revised July 2008
Revised October 2008
Revised December 2008
Revised June 2009
Revised March 2011
Revised May 2011

Affinis Job No. 2215

USGS quadrangles:	**Escondido, Poway, Del Mar, La Jolla, Point Loma, La Mesa, National City, Imperial Beach, Otay Mesa (7.5' series)**
Acreage:	
Keywords:	**San Diego County, City of San Diego, Master Storm Water System Maintenance Program; coastal, archaeological background study**

NATIONAL ARCHAEOLOGICAL DATA BASE INFORMATION

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Report Date:	February 2008, Revised July 2008, Revised October 2008; Revised December 2008; Revised June 2009; Revised March 2011; Revised May 2011
Report Title:	Archaeological Resources Analysis for the Master Storm Water System Maintenance Program, San Diego, California. Project No. 42891
Submitted to:	City of San Diego, Storm Water Division, 2781 Caminito Chollas, San Diego, California 92105
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Contract number:	Affinis Job No. 2215
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Acreage:	
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CONFIDENTIAL APPENDIX
(Bound Separately)

A Records Search Maps

LIST OF ACRONYMS

ADRP	Archaeological Data Recovery Program
ARDDRP	Archaeological Research Design and Data Recovery Program
APE	Area of Potential Effect
CEQA	California Environmental Quality Act
CSVR	Consultant Site Visit Record
CWP	Clean Water Program for Greater San Diego
EAS	Environmental Analysis Section
HRG	Historic Resources Guide
IHA	Individual Historic Assessment
IMP	Individual Maintenance Plan
LDR	Land Development Review
MC	Maintenance Contractor
MLD	Most Likely Descendent
MMC	Mitigation Monitoring Coordinator
NAHC	Native American Heritage Commission
PI	Principal Investigator
RE	Resident Engineer

MANAGEMENT SUMMARY

Currently, the Storm Water Division provides flood control maintenance for storm water facilities in seven watersheds in the City of San Diego. Maintenance activities include removal of vegetation, trash, debris, and sediment. Many storm water facility segments include both natural and concrete-lined areas, which may require the use of a combination of equipment and maintenance techniques to complete maintenance activities.

Recognizing the need for, and importance of, continuing the periodic inspection, cleaning, and maintenance of storm water channels and basins in the future, the City has proposed the Master Storm Water System Maintenance Program (Master Program). The focus of the Master Program is to evaluate each of the City's storm water facilities for maintenance needs.

The Master Program covers areas throughout the City of San Diego, from Rancho Bernardo on the north to Otay Mesa and the Tijuana River on the south. Metropolitan San Diego is in western San Diego County. The cultural resources study consisted of a records search and assessment of the potential for encountering archaeological resources within the channels and basins included in the Master Program. The methods and results of the study, as well as recommendations for further, project-specific measures are detailed in this report.

A constraints-level study was conducted for the Master Program. This included review of records obtained from the South Coastal Information Center (SCIC) at San Diego State University. Records reviewed included survey coverage maps, showing the extent of previous surveys and other archaeological studies, as well as site records of previously recorded archaeological sites. The records search also included locations of historic structures, as well as historic topographic maps. These data were obtained for each channel/basin segment and 300 ft (100 m) on either side of the segment. Although maintenance work is anticipated to be generally confined to a narrow area along the channel, the movement of equipment, etc. would likely necessitate a wider Area of Potential Effect (APE). Therefore, the 600-ft wide APE (300 ft on either side of the channel centerline) was addressed. This APE is also consistent with the cultural resources study conducted for the Canyon Sewer Cleaning Program and Long-Term Canyon Sewer Maintenance Program (Cook et al. 2003).

The records search data are presented by hydrologic unit. Sites were characterized based on information in the site records, supplemented by personal knowledge, where applicable. Site significance was also taken from site records, where given, as well as personal knowledge, as applicable. In the majority of cases, site significance was not noted on the site record, even when testing/ evaluation had been undertaken.

Predictive modeling based on land use/settlement patterns, topography, geology, and other factors was used to assess the potential for important undiscovered cultural resources to be associated with storm water channels and/or basins. Based on these factors, as well

as the records search results, the report summarizes whether there is a low, moderate, or high potential for cultural resources to be related to channels and basins included in the Master Program.

No field work was undertaken for the current project, so there may be sites that were previously recorded which no longer exist. Conversely, there may be undocumented sites with the study APE.

A number of known cultural resources within the study area APE have been determined to be significant under CEQA and City of San Diego guidelines. In addition, there is a potential for significant buried cultural resources in several areas. It is important to note that the probability assessment is based on very general assumptions and is intended to only provide a Program level of analysis. As described in the discussion of mitigation measures, each project included within the proposed Master Program would undergo a project-specific assessment referred to as an Individual Historic Assessment (IHA) to determine the presence and potential impact on archaeological and historical resources at the time maintenance is proposed. At that time, based on more precise data, a more accurate assessment would be made regarding the presence or absence of such resources.

Implementation of the Master Program has the potential to have significant effects on cultural resources in two primary ways: access roads and maintenance. The potential for impacts to cultural resources would generally be highest for activities that occur outside the immediate areas of the channels (e.g., access roads and staging). Channel formation through natural erosion and/or excavation would often result in the low potential for cultural resources, although in some areas, alluvium has served to bury cultural resources.

The following measures shall be implemented prior to the first time maintenance occurs within a storm water facility pursuant to the Master Program. Once a maintenance area has been surveyed, significance has been determined, and mitigation measures undertaken to protect (e.g., fencing or soil capping) and/or mitigate (e.g., data recovery) any affected historical resource, in accordance with the City's Historical Resources Guidelines (HRG), no further historical resource investigation shall be required. Implementation of these measures would reduce impacts to historical resources and Native American values to below a level of significance.

Prior to commencement of the first occurrence of maintenance activity within a drainage facility included in the Master Program, an archaeologist, meeting the qualifications specified by the City's HRG, shall determine the potential for significant historical resources to occur in the maintenance area. If the archaeologist determines that the potential is moderate to high, an IHA shall be prepared. Based on the IMP for the proposed maintenance activity, the archaeologist shall determine the APE, which shall include access, staging, and maintenance areas. The IHA shall include a field survey of the APE with a Native American monitor, using the standards of the City's HRG. In addition, the archaeologist shall request a record search from the SCIC. Based on the results of the

field survey and record search, the archaeologist shall conduct an archaeological testing program for any identified historical resources, using the standards of the City's HRG. If significant historical resources are identified, they shall be taken to the Historical Resources Board for designation as Historic Sites. Avoidance or implementation of an Archaeological Data Recovery Program (ADRP) and Archaeological Monitoring Program shall be required to mitigate project impacts to significant historical resources. The archaeologist shall prepare a report in accordance with City guidelines.

Prior to initiating any maintenance activity where the IHA identifies existing significant cultural resources within the APE, the following actions shall be taken. Mitigation recommendations from the IHA shall be incorporated into the IMP. Typical mitigation measures would include but not be limited to: delineating resource boundaries on maintenance plans; implementing protective measures such as fencing, signage or capping; and selective monitoring during maintenance activities. If impacts to significant cultural resources cannot be avoided, the Principal Investigator (PI) shall prepare an Archaeological Research Design and Data Recovery Program (ARDDRP) for the affected resources. The data recovery program would be implemented prior to initiating any maintenance activity. The PI would prepare a report detailing the methods, analysis, and results of the data recovery program.

Prior to initiating any maintenance activity where the IHA identifies a moderate to high potential for the occurrence of significant cultural resources within the APE, the following actions shall be taken. A qualified archaeological monitor and a qualified Native American monitor shall be identified and be present during initial excavation/grading of undisturbed ground. A pre-maintenance meeting shall be held on-site prior to commencing any maintenance which may impact a significant cultural resource. The meeting shall include representatives from the archaeological consulting firm (Monitor), Native American, Storm Water Division, Mitigation Monitoring Coordinator (MMC), Resident Engineer (RE), and Maintenance Contractor (MC). The archaeological monitor shall explain the monitoring process. The monitor shall be present full-time during maintenance activities which could result in impacts to archaeological resources. In the event of a discovery, the archaeological monitor shall direct the contractor to temporarily divert activities in the area of discovery. The PI shall prepare a report that describes the results, analysis and conclusions of the monitoring program.

I. INTRODUCTION

PROJECT LOCATION

The Master Storm Water System Maintenance Program (Master Program) covers areas throughout the City of San Diego, from Rancho Bernardo on the north to Otay Mesa and the Tijuana River on the south (Figures 1 and 2). Metropolitan San Diego is in western San Diego County (Figure 1).

PROJECT DESCRIPTION

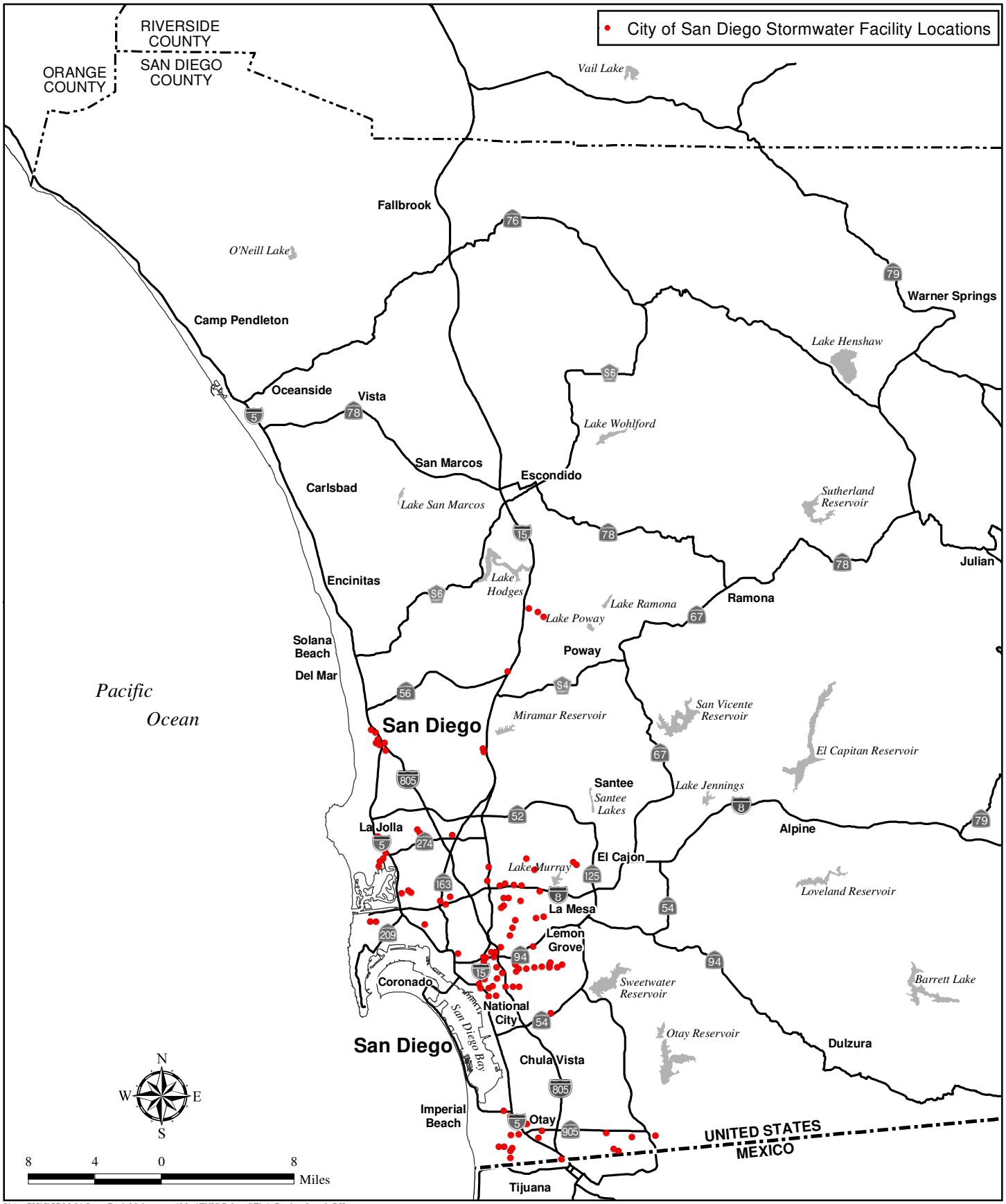
Currently, the Storm Water Division provides flood control maintenance of approximately 32 miles of storm water facilities in seven watersheds in the City of San Diego. Maintenance activities include removal of vegetation, trash, debris, and sediment. Maintenance typically is accomplished with mechanical equipment (backhoes, skid-steers, and bulldozers). In some cases, maintenance is done with hand tools. The selection of maintenance method and equipment depend largely on the site-specific characteristics of each storm water facility, including size (width, depth), flow characteristics, surrounding land uses and vegetation, availability of access, and whether the storm water facility is concrete-lined or natural bottom. Many storm water facility segments include both natural and concrete-lined areas, which may require the use of a combination of equipment and maintenance techniques to complete maintenance activities. Where possible, maintenance activities occur during the dry months to take advantage of low urban runoff flows within the storm water facility.

The Storm Water Division maintains a priority maintenance list of channels based upon accumulation of vegetation, debris, and/or sediment, as well as the flooding potential.

Recognizing the need for, and importance of, continuing the periodic inspection, cleaning, and maintenance of storm water channels and basins in the future, the City has proposed the Master Program. The focus of the Master Program is to evaluate each of the City's storm water facilities for maintenance needs.

The objectives of the Master Program can be summarized as follows:

- Fulfill the mandate of Section 26.1 of the San Diego City Charter to provide essential public works and public health services by maintaining the storm water conveyance system for the purpose of reducing flood risk;
- Develop a comprehensive program that will govern future maintenance of the City's storm water system in an efficient, economic, environmentally and aesthetically acceptable manner for the protection of property and life;
- Ensure implementation of Best Management Practices (BMPs) and maintenance protocols during maintenance activities to avoid and/or minimize effects to environmental resources, and incorporate the analysis of the operational and



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Regional Location Map

CITY OF SAN DIEGO MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM

Figure 1

Study Area Locations

CITY OF SAN DIEGO MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM

HELIX

Figure 2

pollution prevention benefits of each proposed project; and

- Create an integrated comprehensive review process for annual maintenance activities that will facilitate authorizations from local, state, and federal regulatory agencies.

CULTURAL RESOURCES STUDY

The cultural resources study consisted of a records search and assessment of the potential for encountering archaeological resources within the channels and basins included in the Master Program. Mary Robbins-Wade served as the project manager/ project archaeologist. The methods and results of the study, as well as recommendations for further, project-specific measures are detailed in this report.

II. ENVIRONMENTAL SETTING

PHYSICAL AND BIOLOGICAL ENVIRONMENT

The project area is in the coastal plains of western San Diego County, where the climate is characterized as semi-arid, cool (Griner and Pryde 1976:Figure 3.4). The dominant topographic feature of the coastal plain physiographic province is a series of marine terraces, or mesas. Three terraces are recognized within the metropolitan San Diego area: the La Jolla Terrace, at elevations from 50 to 70 ft above sea level; the next easterly, the Linda Vista Terrace, at elevations between 300 ft and 500 ft above sea level; and the most easterly, the Poway Terrace, which occurs at elevations between 800 and 1,200 ft above sea level. "The Linda Vista Terrace is the most apparent and extensive of the three terraces, although its surface has been considerably fragmented by stream incision. It includes most of the familiar 'mesas' of the San Diego metropolitan area" (McArthur 1976:16). Marine terraces are dissected by canyon systems, incised by stream erosion into the marine sedimentary rock. Many canyons were originally cut deeper than they are today, but with rising sea levels following periods of deglaciation, these canyon and valley floors were infilled and are now underlain by deposits of river sand and gravel (McArthur 1976).

Precipitation in the San Diego area varies by elevation and distance from the coast. The coastal areas generally receive 10 to 12 inches of rainfall a year, with coastal mesas receiving a few inches more than coastal valleys (Beauchamp 1986). The majority of rainfall comes between October and March, and many seasonal drainages are dry by summer.

Vegetation patterns in the San Diego area tend to be correlated with climatic and soil conditions. Beauchamp (1986) indicated that coastal sage scrub was originally the dominant vegetation type along the shore, the coastal mesas, and the coastal valleys. Coast live oak woodlands often form a dense canopy in canyon bottoms, on some north-facing slopes, and around the edges of small valleys. Associated species include poison oak, gooseberry, and elderberry. Riparian woodland, a community of great importance as wildlife habitat, is composed mainly of winter-deciduous trees that require water near the soil surface. Willow, white alder, California sycamore, ash, and cottonwood form dense woodlands in moist canyons and drainage bottoms. Other plants associated with this community include mugwort, mulefat, stinging nettle, and wild grape (Beauchamp 1986).

"The majority of Southern California natural vegetation was originally composed of woody shrubs" (Beauchamp 1986:9). Inland sage scrub, consisting primarily of summer drought-deciduous aromatic shrubs and subshrubs, is dominated by California sagebrush, flat-top buckwheat, white sage, and laurel sumac. Other associated plants include broom baccharis, San Diego sunflower, golden-yarrow, and sawtooth goldenbush. Sage scrub in coastal bluff areas includes many succulent species and is known as maritime succulent scrub (Beauchamp 1986)

Chamise chaparral grows in areas similar to that of inland sage scrub but that receive greater amounts of rainfall, or where rainfall is augmented by fog drip. Chamise is the dominant species in this community, which often includes mission manzanita, Cleveland sage, black sage, and coast spice bush as well. Mixed chaparral consists of shrubs with hard, broad leaves and stiff, woody stems. The composition of the community varies in different parts of the county. Along the coast, mixed chaparral is made up of coast white lilac, Ramona lilac, Del Mar manzanita, holly-leaf redberry, smooth mountain mahogany, bush poppy, scrub oak, and chamise (Beauchamp 1986).

Grassland areas today are generally dominated by non-native species. These grassland areas are often in locations that once supported native grasses, however.

Coastal salt marsh is found in areas with tidal influence, although the community may be found as far as several miles upstream of such influence. Common species in coastal salt marshes include pickle-weed, glasswort, sea-lavender, salt-grass, salt-cedar, and dodder. Eelgrass and surfgrass are found in calm waters of coastal inlets. Freshwater marsh vegetation grows in standing fresh water and is dominated by cattails, bulrushes, smartweed, and dock (Beauchamp 1986).

These various vegetation communities would have provided a number of plant species known to have been used by the Kumeyaay and Luiseño people for food, medicine, tools, shelter, ceremonial and other uses (Bean and Shipek 1978; Christenson 1990; Hedges and Beresford 1986; Luomala 1978; White 1963). Many of the animal species found in these communities would have been used by native populations as well. Rabbits were an important food source, as were deer, numerous small mammals, and birds. Fish and shellfish were obtained from open coast and lagoon environments.

CULTURAL ENVIRONMENT

General Culture History

Several summaries discuss the prehistory of San Diego County and provide a background for understanding the archaeology of the general project area. Moratto's (1984) review of the archaeology of California contains important discussions of Southern California, including the San Diego area. Bull (1983, 1987), Carrico (1987), Gallegos (1987), and Warren (1985, 1987) provide summaries of relatively recent work and interpretations. The following is a brief discussion of the culture history of the San Diego region.

Carter (1957, 1978, 1980), Minshall (1976) and others (e.g., Childers 1974; Davis 1968, 1973) have long argued for the presence of Pleistocene humans in California, including the San Diego area. The sites identified as "early man" are all controversial. Carter and Minshall are best known for their discoveries at Texas Street and Buchanan Canyon. The material from these sites is generally considered nonartifactual, and the investigative methodology is often questioned (Moratto 1984).

The earliest accepted archaeological manifestation of Native Americans in the San Diego area is the San Dieguito complex, dating to approximately 10,000 years ago (Warren 1967). The San Dieguito complex was originally defined by Rogers (1939), and Warren published a clear synthesis of the complex in 1967. The material culture of the San Dieguito complex consists primarily of scrapers, scraper planes, choppers, large blades, and large projectile points. Rogers considered crescentic stones to be characteristic of the San Dieguito complex as well. Tools and debitage made of fine-grained green metavolcanic material, locally known as felsite, were found at many sites which Rogers identified as San Dieguito. Often these artifacts were heavily patinated. Felsite tools, especially patinated felsite, came to be seen as an indicator of the San Dieguito complex. Until relatively recently, many archaeologists felt that the San Dieguito culture lacked milling technology and saw this as an important difference between the San Dieguito and La Jolla complexes. Sleeping circles, trail shrines, and rock alignments have also been associated with early San Dieguito sites. The San Dieguito complex is chronologically equivalent to other Paleoindian complexes across North America. San Dieguito material underlies La Jolla complex strata at the C. W. Harris site in San Dieguito Valley (Warren, ed. 1966).

The traditional view of San Diego prehistory has the San Dieguito complex followed by the La Jolla complex at least 7000 years ago, possibly as long as 9000 years ago (Rogers 1966). The La Jolla complex is part of the Encinitas tradition and equates with Wallace's (1955) Millingstone Horizon. The Encinitas tradition is generally "recognized by millingstone assemblages in shell middens, often near sloughs and lagoons" (Moratto 1984:147). "Crude" cobble tools, especially choppers and scrapers, characterize the La Jolla complex (Moriarty 1966). Basin metates, manos, discoidals, a small number of Pinto series and Elko series points, and flexed burials are also characteristic.

Warren et al. (1961) proposed that the La Jolla complex developed with the arrival of a desert people on the coast who quickly adapted to their new environment. Moriarty (1966) and Kaldenberg (1976) have suggested an in situ development of the La Jolla people from the San Dieguito. Moriarty has since proposed a Pleistocene migration of an ancestral stage of the La Jolla people to the San Diego coast. He suggested this Pre-La Jolla complex is represented at Texas Street, Buchanan Canyon, and the Brown site (Moriarty 1987).

Since the 1980s, archaeologists in the region have begun to question the traditional definition of San Dieguito people simply as makers of finely crafted felsite projectile points, domed scrapers, and discoidal cores, who lacked milling technology. The traditional defining criteria for La Jolla sites (manos, metates, "crude" cobble tools, and reliance on lagoonal resources) have also been questioned (Bull 1987; Cárdenas and Robbins-Wade 1985; Robbins-Wade 1986). There is speculation that differences between artifact assemblages of "San Dieguito" and "La Jolla" sites reflect functional differences rather than temporal or cultural variability (Bull 1987; Gallegos 1987). Gallegos (1987) has proposed that the San Dieguito, La Jolla, and Pauma complexes are manifestations of the same culture, with differing site types "explained by site location, resources exploited, influence, innovation and adaptation to a rich coastal region over a long period of time" (Gallegos

1987:30). The classic "La Jolla" assemblage is one adapted to life on the coast and appears to continue through time (Robbins-Wade 1986; Winterrowd and Cárdenas 1987). Inland sites adapted to hunting contain a different tool kit, regardless of temporal period (Cárdenas and Van Wormer 1984).

Several archaeologists in San Diego, however, do not subscribe to the Early Prehistoric/Late Prehistoric chronology (see Cook 1985; Gross and Hildebrand 1998; Gross and Robbins-Wade 1989; Shackley 1988; Warren 1998). They feel that an apparent overlap among assemblages identified as "La Jolla," "Pauma," or "San Dieguito" does not preclude the existence of an Early Milling period culture in the San Diego region, whatever name is used to identify it, separate from an earlier culture. One problem these archaeologists perceive is that many site reports in the San Diego region present conclusions based on interpretations of stratigraphic profiles from sites at which stratigraphy cannot validly be used to address chronology or changes through time. Archaeology emphasizes stratigraphy as a tool, but many of the sites known in the San Diego region are not in depositional situations. In contexts where natural sources of sediment or anthropogenic sources of debris to bury archaeological materials are lacking, other factors must be responsible for the subsurface occurrence of cultural materials. The subsurface deposits at numerous sites are the result of such agencies as rodent burrowing and insect activity. Recent work has emphasized the importance of bioturbative factors in producing the stratigraphic profiles observed at archaeological sites (see Gross 1992). Different classes of artifacts move through the soil in different ways (Bocek 1986; Erlandson 1984; Johnson 1989), creating vertical patterning (Johnson 1989) that is not culturally relevant. Many sites which have been used to help define the culture sequence of the San Diego region are the result of just such nondepositional stratigraphy.

The Late Prehistoric period is represented by the San Luis Rey complex in northern San Diego County and the Cuyamaca complex in the southern portion of the county. The San Luis Rey complex is the archaeological manifestation of the Shoshonean predecessors of the ethnohistoric Luiseño (named for the San Luis Rey Mission). The Cuyamaca complex represents the Yuman forebears of the Kumeyaay (Diegueño, named for the San Diego Mission). Agua Hedionda is traditionally considered to be the point of separation between Luiseño and Northern Diegueño territories.

Elements of the San Luis Rey complex include small, pressure-flaked projectile points (Cottonwood and Desert Side-notched series); milling implements, including mortars and pestles; *Olivella* shell beads; ceramic vessels; and pictographs (True et al. 1974). Of these elements, mortars and pestles, ceramics, and pictographs are not associated with earlier sites. True noted a greater number of quartz projectile points at San Luis Rey sites than at Cuyamaca complex sites, which he interpreted as a cultural preference for quartz (True 1966). He considered ceramics to be a late development among the Luiseño, probably learned from the Diegueño. The general mortuary pattern at San Luis Rey sites is ungathered cremations.

The Cuyamaca complex, reported by True (1970), is similar to the San Luis Rey complex, differing in the following points:

1. Defined cemeteries away from living areas;
2. Use of grave markers;
3. Cremations placed in urns;
4. Use of specially made mortuary offerings;
5. Cultural preference for side-notched points;
6. Substantial numbers of scrapers, scraper planes, etc., in contrast to small numbers of these implements in San Luis Rey sites;
7. Emphasis placed on use of ceramics; wide range of forms and several specialized items;
8. Steatite industry;
9. Substantially higher frequency of milling stone elements compared with San Luis Rey;
10. Clay-lined hearths (True 1970:53-54).

Both the San Luis Rey and Cuyamaca complexes were defined on the basis of village sites in the foothills and mountains. Coastal manifestations of both Luiseño and Kumeyaay differ from their inland counterparts. Fewer projectile points are found on the coast, and there tends to be a greater number of scrapers and scraper planes at coastal sites (Robbins-Wade 1986, 1988). Cobble-based tools, originally defined as "La Jolla", are characteristic of coastal sites of the Late Prehistoric period, as well (Cárdenas and Robbins-Wade 1985:117; Winterrowd and Cárdenas 1987:56).

History

While Juan Rodriguez Cabrillo visited San Diego briefly in 1542, the beginning of the historic period in the San Diego area is generally given as 1769. It was that year that the Royal Presidio and the first Mission San Diego were founded on a hill overlooking Mission Valley. The Mission San Diego de Alcala was constructed in its current location five years later. The Spanish Colonial period lasted until 1820 and was characterized by religious and military institutions bringing Spanish culture to the area and attempting to convert the Native American population to Christianity. Mission San Diego was the first mission founded in Southern California. Mission San Luis Rey, in Oceanside, was founded in 1798.

The Mexican period lasted from 1820 to 1846. Following secularization of the missions in 1834, mission lands were given as large land grants to Mexican citizens as rewards for service to the Mexican government. The society made a transition from one dominated by the church and the military to a more civilian population, with people living on ranchos or in pueblos.

The American period began in 1846, and California became a state in 1850. Metropolitan San Diego began to develop in 1850, but boomed in the 1880s. While the 1880s were a period of alternating boom and bust, by the 1890s, the city entered a time of steady growth.

Subdivisions such as Golden Hill, Sherman Heights, Logan Heights, Banker's Hill, and University Heights began in the 1890s. As the city continued to grow in the early 20th century, the downtown's residential character changed. Streetcars and the introduction of the automobile allowed people to live farther from their downtown jobs. New suburbs were developed in Hillcrest, North Park, Mission Hills, and Normal Heights, as well as Point Loma, Ocean Beach, Pacific Beach, and Mission Beach. In the post-World War II years, San Diego grew significantly, with new jobs created in the aircraft industry, shipbuilding, fishing, and other enterprises.

III. RESEARCH METHODS

A constraints-level study was conducted for the Master Program. This included review of records obtained from the South Coastal Information Center at San Diego State University. Records reviewed included survey coverage maps, showing the extent of previous surveys and other archaeological studies, as well as site records of previously recorded archaeological sites. The records search also included locations of historic structures, as well as historic topographic maps. These data were obtained for each channel/basin segment and 300 ft (100 m) on either side of the segment. Although maintenance work is anticipated to be generally confined to a narrow area along the channel, the movement of equipment, etc. would likely necessitate a wider Area of Potential Effect (APE). Therefore, the 600-ft wide APE (300 ft on either side of the channel centerline) was addressed. This APE is also consistent with the cultural resources study conducted for the Canyon Sewer Cleaning Program and Long-Term Canyon Sewer Maintenance Program (Cook et al. 2003).

Sites were plotted on USGS topographic maps (Confidential Appendix A), and data relating to site type, dates of original site recording and latest site updates, and site significance were recorded for each site within the study APE. These data are presented by hydrologic unit in the Known Resources section.

Based on the survey coverage maps, an attempt was made to estimate the percentage of each channel/basin segment that had been surveyed for cultural resources, in order to aid in assessing the potential for cultural resources. Other factors evaluated in order to assess the potential for cultural resources within a segment were topographic features, such as the steepness of slopes, the degree of past disturbance, and the potential for buried cultural resources, due to alluvium or other factors. In some cases, the channel itself is quite disturbed (or concrete-lined), but the surrounding area has a potential for cultural resources, which could be subject to impacts from storm water facility maintenance. The sensitivity of each channel segment/basin is presented in the Resource Potential section.

No field work was undertaken for the current project, so there may be sites that were previously recorded which no longer exist. Conversely, there may be undocumented sites with the study APE.

In order to be consistent with a similar cultural resources study conducted for the Canyon Sewer Cleaning Program and Long-Term Canyon Sewer Maintenance Program (Cook et al. 2003), the current study uses the same site type descriptions used in that study. These descriptions are presented verbatim here.

> **Habitation sites**. Prehistoric habitation sites were occupied seasonally or on a semi-permanent basis in order to exploit seasonally available resources. Such sites contain a wide variety of artifact types indicating that a range of activities were carried out on-site. The range of activities expected at habitation sites includes food preparation, milling, cooking, production of a

wide range of tools, construction, ceramic production, leather working, basket weaving, and ritual activities. Subsurface midden or refuse deposits reflecting the length and intensity of occupation are expected at habitation sites.

Temporary Camps. A variety of artifact types are expected at temporary camps, reflecting the range of activities carried out on-site. Activities carried out at temporary camps might include any of the activities carried out at habitation sites, but the range of activities is expected to be more restricted. Midden deposits at temporary camps are shallow or non-existent, reflecting the short-term nature of occupation.

Artifact Scatter. Artifact scatters are defined as a surface scatter of artifacts such as ceramics, flaked stone, and ground stone without a subsurface deposit. Some animal bone and/or shell may also be present. Artifact scatters may represent an extractive or special activity area, or a temporary stopping place.

Lithic Scatter. Lithic scatters are defined as low-density scatters of debitage, cores, and other flaked stone debris. They lack diagnostic artifacts which are specific to particular periods and functions.

Bedrock Milling. Bedrock milling is defined as milling features located on bedrock outcrops or large boulders. Such features include mortars, basin metates, and milling slicks. Mortars are deep, conical basins ground into the rock surface. They were used in conjunction with elongated pestles to crush and grind acorns. Basin metates are generally shallow bowl-shaped depressions ground into the rock surface. They were used with rounded, hand-sized manos or grinding stones to grind seeds, such as chia. Slicks are smooth areas of the rock surface which have developed a polish as a result of grinding. They were produced as a result of grinding seeds with a hand-held mano. A surface artifact scatter may be associated with the milling features. However, if the scatter is dense or if a subsurface component is identified, the bedrock milling is identified as part of a habitation site.

Quarry. A quarry site is defined as an area where lithic (stone) raw material was procured. Quarry sites are extractive sites to which work groups came with the express purpose of procuring stone suitable for tool production. As these sites were only briefly visited as needed, they do not generally contain material associated with habitation sites.

Shell Midden. Shell deposits may or may not be associated with other cultural material. If the deposit is not associated with a complex assemblage, it may represent a locus where shellfish were processed. If the shell is

associated with subsurface deposits reflecting a range of activities, such as milling and tool production, it is classified as a habitation camp or temporary camp.

Historic Sites. A number of historic site types have been identified. These include trash scatters, habitation sites, historic buildings and structures [Cook et al. 2003:14-15].

Rock Art. This site type was not included in the Canyon Sewer Cleaning Program and Long-Term Canyon Sewer Maintenance Program report (Cook et al. 2003), but one site in the current study area falls into this category. "Rock art" includes petroglyphs, patterns etched into rock walls or boulders; and pictographs, patterns "painted" on the rocks using a variety of pigments. Petroglyphs and pictographs tend to be associated with ceremonial or ritual uses and are generally considered culturally significant by the Native American community.

IV. KNOWN RESOURCES

This section presents the records search data by hydrologic unit. Site types are described in the Methods section. The sites were characterized based on information in the site records, supplemented by personal knowledge, where applicable. Site significance was also taken from site records, where given, as well as personal knowledge, as applicable. In the majority of cases, site significance was not noted on the site record, even when testing/ evaluation had been undertaken.

SAN DIEGUITO HYDROLOGIC UNIT

Three sites are recorded within the study APE in the San Dieguito Hydrologic Unit (Table 1). The significance of these sites is not noted on the site records. However, pictographs and petroglyphs, such as those recorded at CA-SDI-7, are generally of cultural importance to the Native American community, making them significant cultural resources. CA-SDI-7 is not recorded within the channel segment, but it is mapped within 300 ft (100 m) of the segment. Because the site records for CA-SDI-7 and CA-SDI-581 have not been updated since their original recording in the late 1950s, it is not known if these sites still exist. There is no record that these sites have been tested to evaluate significance.

Table 1. Cultural Resources Within 300 ft (100 m) of Channel/Basin Segments, San Dieguito Hydrologic Unit

CA-SDI-Number	Primary Number P-37-	Site type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
7		Rock art	Haenszel	1957	NA	NA	Undetermined
581		Artifact scatter	True	n.d.	NA	NA	Undetermined
11,023		Bedrock milling	Cárdenas	1988	NA	NA	Undetermined

PEÑASQUITOS HYDROLOGIC UNIT

Twenty sites have been recorded within 300 ft (100 m) of the channel segments and basins in the Peñasquitos Hydrologic Unit (Table 2). In addition, there are a number sites just outside the study APE, attesting to the archaeological sensitivity of this portion of the study area. The Peñasquitos Unit includes the mouth of Carmel Valley, the western end of Carroll Canyon, Los Peñasquitos Canyon, the Sorrento Valley area, and Rose Canyon, all rich in archaeological resources. The ethnohistoric village of Ystagua, in Sorrento Valley, includes deeply buried cultural deposits beneath a very disturbed surface. The ethnohistoric village of Rinconada, also in a very disturbed and developed context, includes midden deposits to at least 2 m (see Winterrowd and Cárdenas 1985). Significant buried

deposits have also been found in Carmel Valley. The recorded sites include five lithic scatters and three artifact scatters that do not appear to represent significant resources, based solely on survey data. Three sites were described as temporary camps, and another was called a temporary camp or habitation site. Four sites were described as habitations, including portions of the villages of Ystagua and Rinconada. Another portion of Ystagua was described as a shell midden. Two sites, one called a lithic scatter and the other not described (recorded by Mabel Harding during the 1950s), apparently have been destroyed by Sorrento Valley Road and decades of development, but there may be subsurface components of these sites, as they are in alluvial settings. The historic site was described as an adobe structure. Prehistoric artifacts and marine shell were noted in the adobe bricks.

Table 2. Cultural Resources Within 300 ft (100 m) of Channel/Basin Segments, Peñasquitos Hydrologic Unit

CA-SDI-Number	Primary Number P-37-	Site type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
1010		Lithic scatter	Kidder	1979	NA	NA	Destroyed?
2723		Temporary camp	Rogers	n.d.	Pigniolo	2002	Undetermined
4605		Habitation	Falk/Ball	1964	Pigniolo	2002	Undetermined
4609		Habitation. Part of village of Ystagua	Krase	1972	NA	NA	Significant
4618		Habitation	Hofmeister/ Bull	n.d.	NA	NA	Undetermined
4647		Not reported	Harding	1952	NA	NA	Destroyed?
5017		**Habitation. Village of Rinconada**	**Rogers**	**n.d.**	**Bissell**	**1992**	**Significant**
5204		**Historic**	**McCoy**	**1977**	**Bull**	**1978**	**Undetermined**
5443		**Shell midden. Part of village of Ystagua**	**Taylor**	**1977**	**NA**	**NA**	**Significant**
5605		Lithic scatter	Moriarty	1977	NA	NA	Undetermined
5606		Lithic scatter	Moriarty	1977	NA	NA	Undetermined
5608		Lithic scatter	Moriarty	1977	Gallegos, Phillips, and Kyle	1995	Not significant
5609		Lithic scatter	Moriarty	1977	Gallegos, Phillips, and Kyle	1995	Not significant

CA-SDI-Number	Primary Number P-37-	Site type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
5826		Habitation or temporary camp	Fulmer	n.d.	NA	NA	Undetermined
10,438		Shell and artifact scatter	Cheever	1985	NA	NA	Undetermined
11,017		Artifact scatter	Smith	1982	NA	NA	Undetermined
12,453		**Artifact scatter**	**Huey and Bass**	**1991**	**NA**	**NA**	**Undetermined**
12,557		**Temporary camp**	**Smith**	**1992**	**Bissell**	**1996**	**Undetermined**
12,558		**Shell scatter**	**Smith**	**1992**	**Iversen**	**2005**	**Not significant; destroyed?**
17,374		**Temporary camp**	**Rogers**	**n.d.**	**NA**	**NA**	**Undetermined**
Bold indicates that the resource is within or immediately adjacent to a channel or basin							

SAN DIEGO HYDROLOGIC UNIT

Eleven archaeological sites have been recorded within the APE in the San Diego Hydrologic Unit (Table 3), which includes the San Diego River through Mission Valley to the ocean, as well as portions of Alvarado Creek, Murphy Canyon, and the canyons of Fairmount Avenue and Montezuma Road. In addition, a number of other sites are recorded in the vicinity in these sensitive areas along the river, testifying to the potential for additional, potentially significant resources. The historic site consists of the remains of foundations and support system of the historic Mission Bay Bridge. Two sites are described as camps, apparently for shellfish processing, and three sites are shell middens. The five habitation sites include a large site in Mission Valley; deeply buried deposits that represent the ethnohistoric village of Cosoy, also in Mission Valley; a habitation site in the Fairmount Avenue canyon; two site numbers that have been assigned to the Mission San Diego de Alcala, its associated buildings and archaeological deposits, and the ethnohistoric village of Nipaguay, located in the same area as the mission. Although much of this site area (including both CA-SDI-35 and CA-SDI-202) has been subject to a great deal of disturbance, overall the site is archaeologically significant and retains significance as a Native American cultural heritage resource. The alluvial setting of Mission Valley is known to contain buried cultural deposits, and such deposits may be encountered during implementation of the Master Program.

Table 3. Cultural Resources Within 300 ft (100 m) of Channel/Basin Segments, San Diego Hydrologic Unit

CA-SDI-Number	Primary Number P-37-	Site type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
35		Historic and habitation	Pilling	1949	Schaefer	1990	Significant
44		Temporary camp	Nelson	n.d.	NA	NA	Undetermined
47		Temporary camp	Nelson	n.d.	DeBarros	1996	Undetermined
202		Historic and habitation	Treganza	n.d.	NA	NA	Significant
11,767		Habitation	Rogers	n.d.	Huey and Baker	1992	Undetermined
12,128		Shell midden	Huey and Baker	1992	NA	NA	Undetermined
12,863		Historic	McKenna	1992	NA	NA	Destroyed
13,708	019016	Habitation	Tift and Strudwick	1994	NA	NA	Unknown
14,152	**014380**	**Habitation. Part of village of Cosoy**	**Schaefer**	**1996**	**NA**	**NA**	**Significant**
16,288	024558	Shell midden	Harris	2002	Recon	2007	Undetermined
16,290	**024560**	**Shell midden**	**Harris**	**2002**	**NA**	**NA**	**Undetermined**
Bold indicates that the resource is within or immediately adjacent to a channel or basin							

PUEBLO SAN DIEGO HYDROLOGIC UNIT

Twenty cultural resources have been recorded within 300 ft (100 m) of channel segments in the Pueblo San Diego Hydrologic Unit, including 10 historic sites, 4 Native American habitation sites, and 1 site that includes both (Table 4). Other resources include a lithic scatter, a shell midden, and an isolated artifact. Two sites were determined not be cultural (one shell scatter was in fill soils, and one “Spanish Rancho” was found to be remnants of a building that post-dates 1950). One of the historic resources is the historic police pistol range, and one site included remains of a structure, but for the most part the historic sites are trash deposits in canyons. The Pueblo San Diego Hydrologic Unit includes the Chollas

Creek and South Chollas Creek drainages with potential for buried cultural resources, both historic and Native American.

Table 4. Cultural Resources Within 300 ft (100 m) of Channel/Basin Segments, Pueblo San Diego Hydrologic Unit

CA-SDI-Number	Primary Number P-37-	Site type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
5580		**Historic**	**Norwood**	**1978**	**KEA**	**1996**	**Undetermined**
10,252		Not cultural	Stein	1985	Gross and Robbins-Wade	1990	Not significant
10,528		Historic	Wade	1986	Smith	2004	Significant
11,165		Habitation	Reading	1978	Smith	1989	Undetermined
11,721		**Historic**	**Clevenger and Briggs**	**1990**	**NA**	**NA**	**Undetermined**
12,087		Not cultural	Gross	1990	Robbins-Wade and Gross	1998	Not significant
12,090		Habitation and historic	Pigniolo and Briggs	1991	NA	NA	Undetermined
12,091		Habitation	Pigniolo	1991	NA	NA	Undetermined
14,162	014494	Lithic scatter	KEA	1996	NA	NA	Undetermined
14,163	**014495**	**Historic**	**KEA**	**1996**	**NA**	**NA**	**Undetermined**
14,164	**014496**	**Historic**	**KEA**	**1996**	**NA**	**NA**	**Undetermined**
14,165	**014497**	**Historic**	**KEA**	**1996**	**NA**	**NA**	**Undetermined**
14,599	**016029**	**Habitation**	**Unknown**	**n.d.**	**Tift**	**1997**	**Destroyed**
17,099	**025706**	**Shell midden**	**Hector and Zelenka**	**2004**	**NA**	**NA**	**Undetermined**
17,203	025853	Habitation	McGinnis	2004	Laguna Mountain	2006	Undetermined
18,347	028330	Historic	Jones & Stokes	2005	NA	NA	Undetermined

CA-SDI-Number	Primary Number P-37-	Site type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
	014493	Historic	Pigniolo and Beck	1996	NA	NA	Undetermined
	014998	Isolated core	Affinis	1990	NA	NA	Not significant
	024259	Historic	Pierson	2001	NA	NA	Undetermined
	024260	**Historic**	**Pierson**	**2001**	**NA**	**NA**	**Undetermined**
Bold indicates that the resource is within or immediately adjacent to a channel or basin							

SWEETWATER HYDROLOGIC UNIT

A single storm water facility segment is within the Sweetwater Hydrologic Unit. No cultural resources are recorded within the APE of this segment.

TIJUANA HYDROLOGIC UNIT

Six cultural resources have been recorded within the APE in the Tijuana Hydrologic Unit Table 5). These include three historic sites, two lithic scatters, and a large buried site that appears to represent the ethnohistoric village of Millejo (CA-SDI-10,669). Although none of the site records for CA-SDI-10,669 address the site's significance, it appears to have the potential to contain archaeologically and culturally significant deposits. One of the lithic scatter sites, CA-SDI-7208, covers hundreds of acres on Otay Mesa. This site has been tested and determined not to be a significant resource (except the portion of the site that has been recorded as CA-SDI-11,424, which is far outside the project APE). One historic house has been destroyed, and no cultural material was found there during monitoring. The second historic site consists of artifacts found in fill soils, and the third is a bridge on Hollister Avenue over the Tijuana River.

Table 5. Cultural Resources Within 300 ft (100 m) of Channel/Basin Segments, Tijuana Hydrologic Unit

CA-SDI-Number	Primary Number P-37-	Site type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
2611		**Lithic scatter**	**Moriarty and Carter**	**1973**	**NA**	**NA**	**Undetermined**
7208		**Lithic scatter**	**Ferguson**	**1979**	**Pierson**	**2002**	**Not significant**
10,669		**Habitation**	**Shipek**	**1976**	**ACOE**	**1992**	**Undetermined**

CA-SDI-Number	Primary Number P-37-	Site type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
11,096		Historic	Van Wormer	1989	Van Wormer and Coleman	1994	Destroyed
17,505	026708	Historic	Pierson	2005	NA	NA	Not significant
17,240	025924	Historic	Steely	2004	NA	NA	Significant
Bold indicates that the resource is within or immediately adjacent to a channel or basin							

OTAY HYDROLOGIC UNIT

A single cultural resource has been recorded within the APE in the Otay Hydrologic Unit (Table 6). CA-SDI-13,072 was described as a 1930s homestead. The site was determined not to be a significant resource.

Table 6. Cultural Resources Within 300 ft (100 m) of Channel/Basin Segments, Otay Hydrologic Unit

CA-SDI-Number	Primary Number P-37-	Site type	Originally Recorded By	Year Recorded	Updated By	Last Update	Site Significance
13,072		Historic	Wade	1993	NA	NA	Not significant
Bold indicates that the resource is within or immediately adjacent to a channel or basin							

V. RESOURCE POTENTIAL

Predictive modeling based on land use/settlement patterns, topography, geology, and other factors was used to assess the potential for important undiscovered cultural resources to be associated with storm water channels and/or basins. Based on these factors, as well as the records search results, Table 7 and Figure 3 summarize whether there is a low, moderate, or high potential for cultural resources to be related to channels and basins included in the Master Program.

LAND USE AND SETTLEMENT PATTERN

Several past studies have addressed land use and settlement patterns in various parts of San Diego County (Christenson 1990; Gallegos and Carrico 1986; Graham et al. 1981; Laylander and Christenson 1988; Robbins-Wade 1990; Shackley 1980). These were summarized by Gross (1993a) in his study of settlement pattern and predictive modeling of site locations for the cultural resources background study for the Clean Water Program of Greater San Diego (CWP). Christenson (1990) addressed settlement pattern and environmental factors on a regional scale, looking at all of San Diego County occupied by Yuman speakers at the time of Spanish contact. She identified landform, slope, type of water source nearby, distance to that water source, vegetation, and geology as important variables in site location, based on statistical tests in which there were significant differences between the values for these variables exhibited by the sites versus non-site locations (Christenson 1990).

In summary, Christenson (1990) found that large habitation sites were located in valleys within 64 m (210 ft) of a spring or seasonal stream, with slopes no greater than 15 percent, generally in grassland areas. Small habitation sites and large resource processing sites were similarly situated, in flat areas of valleys, drainages, or ridges within 90 m (295 ft) of seasonal streams. These sites tended to occur in chaparral grasslands or southern oak woodlands. “Small processing sites, which comprised the largest class of sites in the sample, were found in flat, grassy valley settings, often associated with granitic outcrops, within 160 meters [525 ft] of water. The water type was usually a seasonal stream. Lithic scatters were found in a variety of locations, but over 50 percent were on flat ridges, terraces, or mesas within 170 meters [558 ft] of water. The average distance of all sites to water was 135 meters [443 ft]” (Gross 1993a:VIII-3).

As previously noted, Christenson’s study addressed all of San Diego that was occupied by Yuman speakers at the time of Spanish contact. So it included large areas outside the study area for the Master Program, including mountain and desert locales. Gross’s (1993a) study for the CWP generally addressed the same area as the current study and is quite applicable.

In the CWP study, hillside and slope locations were the most common landform on which sites occurred (26.6 percent), followed closely by valley bottom locations (22.7 percent). Hilltop/ridge locations made up 17.1 percent of sites, and valley margin locations accounted

for 10.7 percent. “The remaining landforms contain 23% of the sites, and none of these other landforms has more than 6% of the sites in the sample” (Gross 1993a:VIII-5).

In terms of geologic setting, Gross (1993a) found that quaternary alluvium was the most common setting, “reflecting the large number of sites in valley bottom and valley margin settings” (Gross 1993a:VIII-6). The second most common geologic setting for sites was the formations of the Poway and La Jolla groups, with cobbles that provided a source of lithic raw material (Hector and Gross 1988:49).

Gross used statistical analyses to determine whether the patterns noted in landform, underlying geology, elevation, distance to water, and other variables were meaningful, the result of cultural selection, or the result of random distribution. These analyses indicated that elevation, distance to water, and differential between site elevation and elevation of the nearest water source are all important considerations in site location. Valley bottom locations were favored, and slopes were avoided. “Geology may have been a consideration as well, although the preference for quaternary alluvium probably reflects the choice of valley bottom locations or the choice of locations near water” (Gross 1993a:VIII-10).

Based on these data, we would expect to encounter archaeological sites in valley bottom and valley margin locations. Sites would be much less likely in steep-sided canyons. Lithic quarrying or processing sites may be found on steeper slopes, but these sites would generally not be as significant as habitations or camp sites.

In addition to settlement patterns, the following factors were used to assess the likelihood for undiscovered cultural resources to occur.

BURIED SITE POTENTIAL

As part of the cultural resources background study for the CWP, Gross (1993b) also addressed the potential for buried archaeological resources within the study area. His study addressed the various factors that may result in the burial of cultural material and the settings in which these occur, as well as a discussion of why buried deposits are important and why understanding depositional processes is vital for interpreting the archaeological record.

Most sites in the San Diego area are not found in depositional environments; cultural material finds its way into a subsurface context through various turbational factors, such as burrowing animals.

> Trampling, pit digging, and other earth-disturbing activities incorporate artifacts into the upper sediment layers at sites (Matthews 1965), but for a site with a long occupation history or repeated occupations, the kinds of stratigraphic relationships expected under the geologic laws of stratigraphy (older materials are deeper than younger materials) do not hold unless that

> site received significant sediment deposition during or between occupations [Gross 1993b:IX-3].

Where sites are truly buried, though, they hold a great deal of research potential.

> [S]ites buried in areas of relatively rapid sediment accumulation can provide critical data for addressing chronological and functional problems. If sediment accumulation is rapid enough to outstrip turbational forces, then buried sites may contain the remains of relatively short-term occupations which are readily interpretable as temporal and functional units. It may also be possible for such sites to be seriated to provide data on artifact assemblage change through time. This would facilitate the identification of time-sensitive artifacts or assemblages that could then be used to help unravel the occupational histories of long-term occupation sites in nondepositional environments. In short, sites with some of the greatest research potential are probably those least likely to be detected during the kind of surface surveys that are generally performed prior to approval of land-disturbing activities [Gross 1993b:IX-1].

Although some cultural features, such as roasting pits, privies, and burials, may penetrate the site surface, for the most part, human activities take place on the ground surface. Artifacts and features arrive in a subsurface context through bioturbation or deposition. The depositional mechanisms of site burial include alluvium; colluvium; eolian (wind-blown) sediments; and anthropogenic (human-caused) mechanisms, such as purposeful burial of materials or cut and fill activities. Floodplains are built up by a process of sedimentation, which tends to be episodic, but a great deal of sediment accumulation can occur, sometimes quite rapidly. Thus, buried archaeological sites can be expected to be found in such program settings. Historically documented floods in San Diego include events in 1811, 1861-1862, 1884, 1908, 1916, 1921, and 1927 (Gross 1993b; Lakeside Historical Society 1985; Peet 1973).

Alluvial fans are also areas of active sediment accumulation. This landform is found at the mouths of streams and in coastal valleys, where “easily-eroded sandstones provide an abundant source of sediments for deposition of the fans” (Gross 1993b:IX:2-3).

While eolian deposits may be present in some areas of San Diego, such as dune environments, these environments do not occur in the study APE.

A common anthropogenic mechanism of site burial that would be expected in many parts of the study APE is earth-moving activity. Land-leveling for development may destroy sites located on the high areas, but sites in low areas may be covered with fill soils. Cultural material is sometimes transported from its original location to a secondary location through such earth-moving activities as well.

In all of these depositional environments, if cultural material is deeply buried, it will only be visible in erosional gullies or road cuts, through plowing and rodent activity, or in grading and

trenching. These sites often exhibit no surface evidence. Archaeological sites within the study APE that are known to have deeply buried deposits include the ethnohistoric villages of Ystagua, Rinconada, Millejo, Cosoy, and Nipaguay. In addition to these sites, buried cultural material may be expected in such areas as Sorrento Valley/Soledad Canyon, Rose Creek, Mission Valley, Chollas Valley, and the Tijuana River Valley. Other drainages in the study area have some degree of alluvial or colluvial sediments as well, but buried sites have not yet been found in some areas, such as Alvarado Canyon. Many drainages in the study area do not offer wide drainage bottoms that would be preferred as a site setting.

PREVIOUS SURVEY COVERAGE

Based on the survey coverage maps, an attempt was made to estimate the percentage of each channel/basin segment that had been surveyed for cultural resources, in order to aid in assessing the potential for cultural resources. If 100 percent of a segment has been surveyed for cultural resources and none have been recorded, it was concluded that there is a low potential for encountering cultural resources there (thus, a low potential for impacts from storm water facility maintenance). If large portions of a facility have not been previously surveyed, the potential for cultural resources was considered moderate to high, unless other factors pointed toward a low likelihood of resources (e.g., channel condition and the predictive modeling factors addressed above).

CHANNEL CONDITION

Channels that are lined with concrete or have been excavated were considered to have a low potential, while natural channels generally were considered to have a moderate to high potential for cultural resources. Again, factors such as degree of past disturbance and topography may lessen the potential for cultural resources even in natural channels. In some cases, the channel itself is quite disturbed (or concrete-lined), but the surrounding area has a potential for cultural resources, which could be subject to impacts from storm water facility maintenance.

CULTURAL RESOURCE SENSITIVITY

Based on the records search data, land use/settlement patterns, predictive modeling, and the potential for buried sites, an assessment was made of the potential for encountering cultural resources within each channel segment or basin. The sensitivity is rated low, moderate, or high, as summarized in Table 7 and illustrated in Figure 3. For instance, if a particular channel has been surveyed for cultural resources in the past and none have been found, and the narrow drainage size would not make it a preferable site location, the sensitivity would be rated low. If a channel segment is within or adjacent to a known archaeological site, or in an area with buried cultural resources, it would be rated high. In at least one case, a channel is within an archaeological site, but the site has been tested and determined not to be a significant resource under CEQA or the guidelines of the City of San Diego. In this case, the sensitivity was rated moderate.

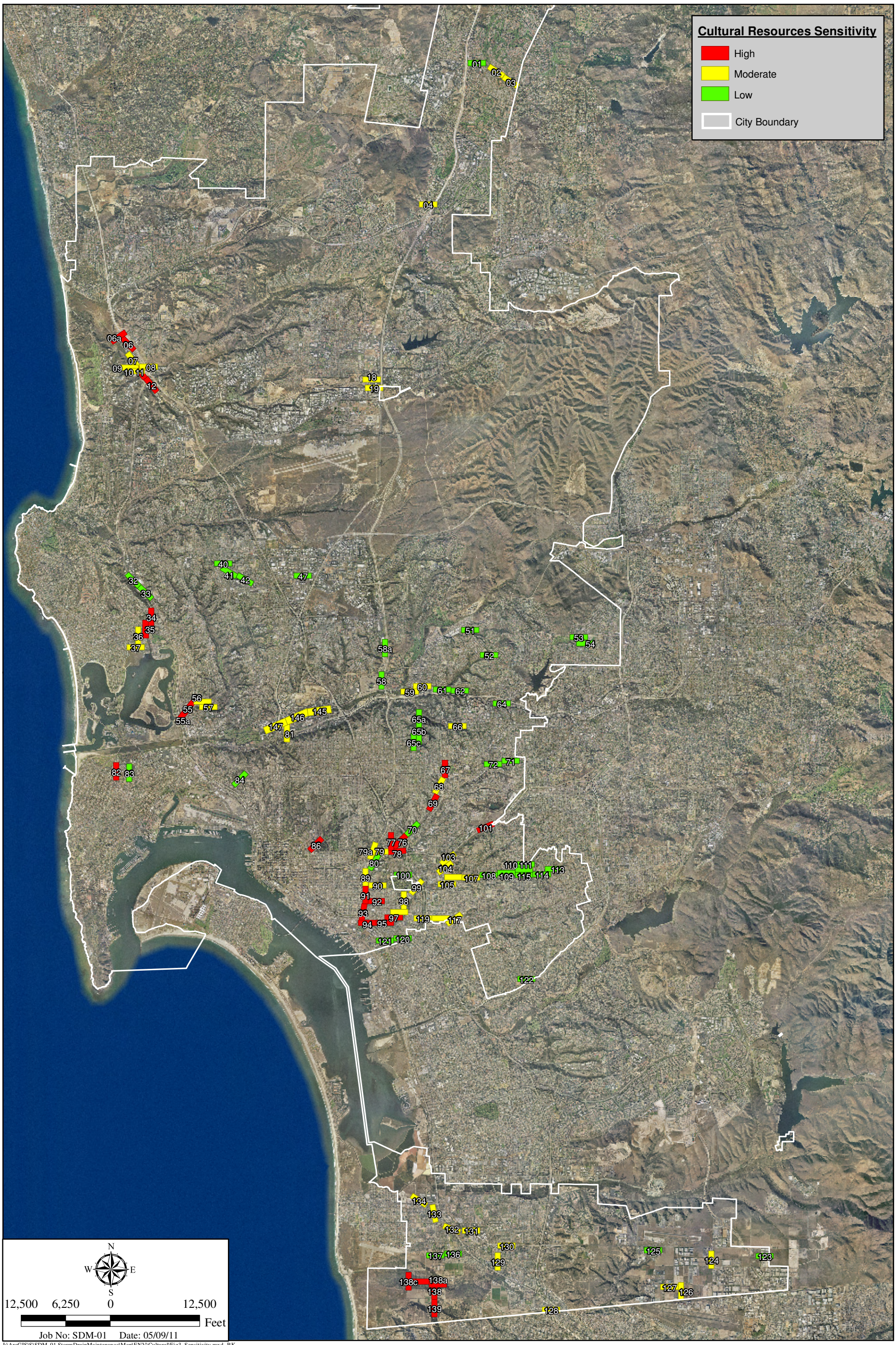
Table 7. Cultural Resources Sensitivity by Channel/Basin

Map No.*	Facility Description	Sensitivity
Channel		
1	Rancho Bernardo Rd & Bernardo Center Dr	Low
2	Rancho Bernardo	Moderate
3	Rancho Bernardo	Moderate
4	11044 Via San Marco	Moderate
6	11689 Sorrento Valley Rd	High
6a	3000 Industrial Court	High
7	Soledad Creek	Moderate
7-8	Los Peñasquitos Channel	Moderate
9	11000 Roselle St / 11100 Flinkote Ave	Moderate
10	Dunhill St & Roselle St	Moderate
11-12	Soledad Creek Channel	High
18	Maya Linda & Via Pasar	Moderate
19	Candida & Via Pasar	Moderate
32	Rose Creek Channel	Low
33	Rose Creek Channel	Low
34	Rose Creek Channel	High
35	Rose Creek Channel	High
36	Mission Bay High School	Moderate
37	Pacific Beach Dr & Olney St	Moderate
40-42	Chateau Channel	Low
47	7969 & 7971 Engineer Rd	Low
49-50	Murphy Canyon Channel	Low
51	Red River Dr & Conestoga Dr	Low
52	Camino del Arroyo	Low
53	Cowles Mountain Channel	Low
54	San Carlos Channel	Low
55	West Morena Blvd	High
55a	West Morena Blvd	High
55-57	Tecolote Creek Channel	Moderate
58	Murphy Canyon Channel	Low
58a	Murphy Canyon Channel	Low
59-60	Alvarado Channel	Moderate
61-62	Alvarado Channel	Low
64	Alvarado Channel	Low
65 a-c	Fairmont Channel	Low
66	Montezuma Channel	Moderate

Map No.*	Facility Description	Sensitivity
67	Auburn Creek Channel	High
68	Auburn Creek Channel	Moderate
69	Auburn Creek Channel	High
70	Auburn Creek Channel	Low
71-72	Chollas Creek Channel	Low
76-77	Auburn Creek Channel	High
78	Chollas Creek Channel	High
79	Chollas Creek Channel	Moderate
79a	Delevan Dr	Moderate
80	Chollas Creek Channel	Low
81	Camino de la Reina & Camino del Arroyo	Moderate
82	Nimitz Channel	High
83	Famosa Blvd & Valeta St	Low
84	Washington Channel	Low
86	Pershing Channel	High
89	Chollas Creek Channel	Moderate
90	Imperial Ave & Gillette St	Moderate
91	Chollas Creek Channel	High
92	35th St & Martin Ave	High
93	Chollas Creek Channel	High
94-95	South Chollas Creek Channel	High
97	South Chollas Creek Channel	High
97a	South Chollas Creek Channel	High
98-99	South Chollas Creek Channel	Moderate
100	42nd & J St	Low
101	South Chollas Creek Channel	High
103-104	South Chollas Creek Channel	Moderate
105	Euclid Ave. & Castana St.	Moderate
106-107	Encanto Channel	Moderate
108-111	Encanto Channel	Low
113-115	Jamacha Channel	Low
117	Solola Channel	Moderate
118-119	Solola Channel	Moderate
120-121	Cottonwood Channel	Low
122	Parkside Channel	Low
123	Sanyo Channel	Low
124	La Media Rd. & Airway Rd.	Moderate
125	Camino Maquiladora & Cactus Rd.	Low

Map No.*	Facility Description	Sensitivity
126	Siempre Viva Rd. & Bristow Ct.	Moderate
127	Britannia Blvd. & Bristow Ct.	Moderate
128	Virginia Channel	Moderate
129	Smythe Channel	Moderate
130	Smythe Channel	Moderate
131	Nestor Creek Channel	High
132-133	Nestor Creek Channel	Moderate
134	Nestor Creek Channel	Moderate
136-137	Tocayo Channel	Low
138a-c	Tijuana River	High
138-139	Smugglers Gulch Channel	High
145-147	San Diego River	Moderate

* The Storm Water Division initially assigned map numbers to all of the facilities within its jurisdiction. The non-sequential map numbers within the table are due to subsequent identification of specific facilities to be maintained in accordance with the proposed Master Program.



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Cultural Resources Sensitivity By Channel/Basin

CITY OF SAN DIEGO MASTER STORMWATER SYSTEM MAINTENANCE PROGRAM

HELIX

Figure 3

VI. IMPACTS AND MITIGATION MEASURES

SIGNIFICANCE CRITERIA

Under the California Environmental Quality Act (CEQA), any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be an historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Pub. Res. Code §5024.1, Title 14 CCR Section 4852) including the following:

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 prehistory or history.

The California Register includes resources listed in or formally determined eligible for listing in the National Register of Historic Places, as well as some California State Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the California Register and are presumed to be significant resources for purposes of CEQA, unless a preponderance of evidence indicates otherwise (Public Resource Code § 5024.1, 14 CCR § 4850).

The most recent amendments to the CEQA Guidelines direct that lead agencies should first evaluate an archaeological site to determine if it meets the criteria for listing in the California Register. If an archaeological site is an historical resource (i.e., listed or eligible for listing in the California Register) potential adverse impacts to it must be considered (Public Resource Code 21084.1 and 21083.2(l)). If an archaeological site is not an historical resource, the effects of the project on those resources shall not be considered a significant effect on the environment.

The City of San Diego has established the following criteria to be used in the determination of significance under CEQA:

> An archaeological site must consist of at least three associated artifacts/ ecofacts (within a 50 square meter area) or a single feature and must be at least 45 years of age. Archaeological sites containing only a surface component are generally considered not significant unless demonstrated otherwise. Such site types may include isolated finds, bedrock milling stations, sparse lithic scatters, and shellfish processing stations. All other archaeological sites are considered potentially significant. The determination of significance is based on a number of factors specific to a particular site including site size, type, and integrity; presence or absence of a subsurface deposit, soil stratigraphy, features, diagnostics, and dateable material; artifact and ecofact density; assemblage complexity; cultural affiliation; association with an important person or event; and ethnic importance.
>
> The determination of significance for historic buildings, structures, objects and landscapes is based on age, location, context, association with an important person or event, uniqueness, and integrity.
>
> A site will be considered to possess ethnic significance if it is associated with a burial or cemetery; religious social or traditional activities of a discrete ethnic population; an important person or event as defined by a discrete ethnic population; or the mythology of a discrete ethnic population [City of San Diego, 1999].

Projects that have a federal nexus (e.g. permits or funding from a federal agency, crossing federal lands) require compliance with federal regulations. The National Historic Preservation Act (NHPA) and the regulations that implement Section 106 of the Act (36 CFR § 800) require federal agencies to consider the effects of their actions on properties listed, or eligible for listing, in the National Register of Historic Places. Eligible resources are considered “historic properties”. The criteria for listing a property on the California Register of Historical Resources were modeled after on those for the National Register of Historic Places, so the significance criteria are quite similar under both sets of regulations.

Section 60.6 of 36 CFR Part 60 presents the criteria for evaluation of cultural resources for nomination to the National Register of Historic Places as follows:

> The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, and association, and
>
> a) That are associated with events that have made a significant contribution to the broad patterns of our history; or
> b) That are associated with the lives of persons significant in our past; or
> c) That embody the distinctive characteristics of a type, period or method or 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) That have yielded, or may be likely to yield, information important in prehistory or history [36 CFR Part 60].

SIGNIFICANCE OF IMPACTS

As addressed in the Known Resources section, a number of known cultural resources within the study area APE have been determined to be significant under CEQA and City of San Diego guidelines. In addition, as summarized in Table 7, there is a potential for significant buried cultural resources in several areas. It is important to note that the probability assessment is based on very general assumptions and is intended to only provide a program level of analysis. As described in the discussion of mitigation measures below, each project included within the proposed Master Program would undergo a project-specific assessment referred to as an Individual Historic Assessment (IHA) to determine the presence and potential impact on archaeological and historical resources at the time maintenance is proposed. At that time, based on more precise data, a more accurate assessment would be made regarding the presence or absence of such resources.

Based on this, implementation of the Master Program has the potential to have significant effects on cultural resources in two primary ways: access roads and maintenance. The potential for impacts to cultural resources would generally be highest for activities that occur outside the immediate areas of the channels (e.g., access roads and staging). Channel formation through natural erosion and/or excavation would often result in the low potential for cultural resources, although in some areas, alluvium has served to bury cultural resources.

Access and Staging

Although most of the storm water facilities already have access routes that have been historically used, new access routes may be required to some of the facilities as shown in the Master Program. Access route creation would entail clearing and perhaps grubbing of vegetation within the access route alignment to allow passage of maintenance vehicles. Any ground disturbance, including vegetation clearing, grubbing, and grading, could result in significant impacts to any cultural resources within the APE.

Continued use of access routes by maintenance vehicles may also result in significant impacts to cultural resources. While the impacts are likely to be confined to the surface of the site, cumulative impacts of vehicle traffic over time to significant sites may result in significant impacts including displacement of cultural material and destruction of cultural material and surface features. Any excavation within or adjacent to significant cultural resources would result in significant impacts to the integrity of significant resources.

On a case-by-case basis, staging, including equipment storage and temporary stockpiling of materials removed during maintenance, could impact cultural resources located alongside

channels and/or basins. Disruption of soil from equipment storage, as well as stockpiling, would impact any cultural resources located beneath these areas.

Maintenance

As stated earlier, the potential for impacting significant cultural resources is considered lower within many of the channels and basins themselves. The basins have all been excavated. As a result, no resources would exist in these areas. Thus, no impacts would be anticipated.

Where channels are lined with concrete or have been created through excavation, no resources would be anticipated to be present. Thus, maintenance of lined or excavated channels would not result in significant cultural resource impacts.

MITIGATION MEASURES

The following measures shall be implemented prior to the first time maintenance occurs within a drainage facility pursuant to the Master Program. Once a maintenance area has been surveyed, significance has been determined, and mitigation measures undertaken to protect (e.g., fencing or soil capping) and/or mitigate (e.g., data recovery) any affected historical resource, in accordance with the City's Historical Resources Guidelines (HRG), no further historical resource investigation shall be required. Implementation of these measures would reduce impacts to historical resources and Native American values to below a level of significance.

Mitigation Measure 4.4.1: Prior to commencement of the first occurrence of maintenance activity within a drainage facility included in the Master Program, an archaeologist, meeting the qualifications specified by the City's HRG, shall determine the potential for significant historical resources to occur in the maintenance area. If the archaeologist determines that the potential is moderate to high, an IHA shall be prepared. Based on the IMP for the proposed maintenance activity, the archaeologist shall determine the APE, which shall include access, staging, and maintenance areas. The IHA shall include a field survey of the APE with a Native American monitor, using the standards of the City's HRG. In addition, the archaeologist shall request a record search from the SCIC. Based on the results of the field survey and record search, the archaeologist shall conduct an archaeological testing program for any identified historical resources, using the standards of the City's HRG. If significant historical resources are identified, they shall be taken to the Historical Resources Board for designation as Historic Sites. Avoidance or implementation of an Archaeological Data Recovery Program (ADRP) and Archaeological Monitoring Program shall be required to mitigate project impacts to significant historical resources. The archaeologist shall prepare a report in accordance with City guidelines. At a minimum, the IHA report shall include:

- Description of maintenance to be performed, including length, width, and depth;
- Prehistory and History Background Discussion;

- Results of Record Search;
- Survey Methods;
- Archaeological Testing Methods;
- Impact Analysis; and
- Mitigation Recommendations, including avoidance or implementation of an ADRP and archaeological monitoring program.

In the event that the IHA indicates that no significant historical resources occur within the APE, or have the potential to occur within the APE, no further action shall be required.

Mitigation Measure 4.4.2: Prior to initiating any maintenance activity where the IHA identifies existing significant historical resources within the APE, the following actions shall be taken.

4.4.2.1. The Storm Water Division shall select a Principal Investigator (PI), who shall be approved by the ADD Environmental Designee. The PI must meet the requirements of the City's HRG.

4.4.2.2. Mitigation recommendations from the IHA shall be incorporated into the IMP to the satisfaction of the PI and the ADD Environmental Designee. Typical mitigation measures shall include but not be limited to: delineating resource boundaries on maintenance plans; implementing protective measures such as fencing, signage or capping; and selective monitoring during maintenance activities.

4.4.2.3. If impacts to significant historical resources cannot be avoided, the PI shall prepare an Archaeological Research Design and Data Recovery Program (ARDDRP) for the affected resources, with input from a Native American consultant, and the ARDDRP shall be approved by the ADD Environmental Designee. Based on the approved research design, a phased excavation program shall be conducted, which will include the participation of a Native American. The sample size to be excavated shall be determined by the PI, in consultation with City staff. The sample size shall vary with the nature and size of the archaeological site, but need not exceed 15 percent of the overall resource area. The area involved in the ARDDRP shall be surveyed, staked and flagged by the archaeological monitor, prior to commencing maintenance activities which could affect the identified resources.

4.4.2.4. A pre-maintenance meeting shall be held on-site prior to commencing any maintenance that may impact a significant historical resource. The meeting shall include representatives from the PI, the Native American consultant, Storm Water Division, Mitigation Monitoring Coordinator (MMC), Resident Engineer (RE), and Maintenance Contractor (MC). The PI shall explain mitigation measures which must be implemented during maintenance. The PI shall also confirm that all protective measures (e.g. fencing, signage or capping) are in place.

4.4.2.5. If human remains are discovered in the course of conducting the ARDDRP, work shall be halted in that area and the following procedures set forth in the California Public Resources Code (Sec. 5097.98) and State Health and Safety Code (Sec. 7050.5) will be taken:

- The PI shall notify the RE, and the MMC. The MMC will notify the appropriate Senior Planner in the Environmental Analysis Section (EAS).
- The PI shall notify the Medical Examiner, after consultation with the RE, either in person or via telephone.
- Work will be redirected 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.
- The Medical Examiner, in consultation with the PI, shall determine the need for a field examination to determine the provenience.
- If a field examination is not warranted, the Medical Examiner shall determine, with input from the PI, if the remains are or are most likely to be of Native American origin.
- If Human Remains are determined to be Native American, the Medical Examiner shall notify the Native American Heritage Commission (NAHC). The NAHC shall contact the PI within 24 hours after the Medical Examiner has completed coordination. The NAHC will identify the person or persons determined to be the Most Likely Descendent (MLD) and provide contact information. The PI will coordinate with the MLD for additional coordination. If (1) the NAHC is unable to identify the MLD, or the MLD fails to make a recommendation within 24 hours after being notified by the Commission; or (2) 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 landowner or their authorized representative shall re-inter the human remains and all associated grave goods with appropriate dignity, on the property in a location not subject to subsurface disturbance. Information on this process will be provided to the NAHC.
- If Human Remains are not Native American, the PI shall contact the Medical Examiner and notify them of the historic era context of the burial. The Medical Examiner shall determine the appropriate course of action with the PI and City staff (PRC 5097.98). If the remains are of historic origin, they shall be appropriately removed and conveyed to the Museum of Man for analysis. The decision for reinterment of the human remains shall be made in consultation with MMC, EAS, the landowner, and the Museum.

4.4.2.6. The PI shall be responsible for ensuring: (1) that all cultural materials collected are cleaned, catalogued and permanently curated with an appropriate institution; (2) that a letter of acceptance from the curation institution has been submitted to MMC; (3) that all artifacts are analyzed to identify function and chronology as they relate to the history of the area; (4) that faunal material is identified as to species; and (5) that specialty studies are completed, as appropriate. Curation of artifacts associated with the survey, testing and/or

data recovery for this project shall be completed in consultation with LDR and the Native American representative, as applicable.

4.4.2.7. The Archaeologist shall be responsible for updating the appropriate State of California Department of Park and Recreation forms-DPR 523 A/B associated with the ARDDRP in accordance with the City's Historical Resources Guidelines, and submittal of such forms to the SCIC with the Final Results Report.

4.4.2.8. The PI shall prepare a Draft Results Report (even if negative) that describes the results, analysis and conclusions of the ARDDRP (with appropriate graphics). The MMC shall return the Draft Results Report to the PI for revision or for preparation of the Final Report. The PI shall submit the revised Draft Results Report to MMC for approval. The MMC shall provide written verification to the PI of the approved report. The MMC shall notify the RE of receipt of all Draft Result Report submittals and approvals. The MMC shall notify the RE of receipt of the Final Results Report.

Mitigation Measure 4.4.3: Prior to initiating any maintenance activity where the IHA identifies a moderate to high potential for the occurrence of significant historical resources within the APE, the following actions shall be taken:

4.4.3.1. 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 appropriate maintenance documents.

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.
3. Prior to the start of work, the applicant must obtain approval from MMC for any personnel changes associated with the monitoring program.

4.4.3.2. Prior to Start of Maintenance

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 Coast 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, Maintenance 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 Maintenance 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. Acknowledgment of Responsibility for Curation (CIP 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) based on the appropriate maintenance documents (reduced to 11x17) to MMC for approval 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 maintenance 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 maintenance requesting a modification to the monitoring program. This request shall be based on relevant information such as review of final maintenance 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 Maintenance Schedule

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

4.4.3.3. During Maintenance

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

1. The Archaeological monitor shall be present full-time during grading/excavation/trenching activities including, but not limited to mainline, laterals, jacking and receiving pits, services and all other appurtenances associated with underground utilities as identified on the AME and as authorized by the CM. The Native American monitor shall determine the extent of their presence during maintenance related activities based on the AME and provide that information to the PI and MMC. **The Maintenance Manager is responsible for notifying the RE, PI, and MMC of changes to any maintenance 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 PME.**

2. The PI may submit a detailed letter to MMC during maintenance 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 may reduce or increase the potential for resources to be present.

2. The 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 trenching activities in the area of discovery and immediately notify the RE or BI, 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.

C. Determination of Significance

1. The PI and Native American monitor shall evaluate the significance of the resource. If Human Remains are involved, follow protocol in Section 4.4.2.4 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.
      (1) Note: For pipeline trenching projects only, the PI shall implement the Discovery Process for Pipeline Trenching projects identified below under "D."
   c. If 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 no further work is required.
      (1) Note: For Pipeline Trenching Projects Only. 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 Projects Only: If significance can not 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 Projects

The following procedure constitutes adequate mitigation of a significant discovery encountered during pipeline trenching activities 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 Historical Resources Guidelines. 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.

4.4.3.4. Discovery of Human Remains

If human remains are discovered, work shall halt in that area and the following procedures as set forth in 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).
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 the California Public Resource and Health & Safety Codes.
4. The MLD will have 48 hours from being granted access to the site 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 shall be determined between the MLD and the PI,
6. The remains shall be re-interred 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.
7. 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.
8. 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 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 Museum of Man for analysis. The decision for internment of the human remains shall be made in consultation with MMC, EAS, the applicant department and/or Real Estate Assets Department (READ) and the Museum of Man.

4.4.3.5. 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 4.4.2.3 – During Maintenance, and 4.4.2.4 – Discovery of Human Remains.
   c. Potentially Significant Discoveries
      If the PI determines that a potentially significant discovery has been made, the procedures detailed under Section 4.4.2.3 – During Maintenance 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 4.4.2.3-B, unless other specific arrangements have been made.

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

1. The Maintenance 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.

4.4.3.6. Post Maintenance

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 Historical Resources Guidelines (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.
   a. For significant archaeological resources encountered during monitoring, the basis for determining archaeological significance and 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 Historical Resources Guidelines, 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. 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.
3. The RE or BI, as appropriate shall obtain signature on the Accession Agreement and shall return to PI with copy submitted to MMC.
4. 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.

VII. INDIVIDUALS AND AGENCIES CONSULTED

Scott A. Mattingly	South Coastal Information Center

VIII. PERSONNEL

The following persons participated in the preparation of this report:

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