

*Appendix I*

*Paleontological and Archaeological Evaluation Report*



## *Appendices*

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# **PALEONTOLOGICAL AND ARCHAEOLOGICAL EVALUATION REPORT AND RECOMMENDATIONS FOR THE IRVINE BUSINESS COMPLEX, CITY OF IRVINE, CALIFORNIA**

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**Project Number:** 1382  
**Type of Study:** Paleontological and Archaeological Assessment  
**Sites:** P-30-121, 195, 196  
**Localities:** San Joaquin Marsh  
**USGS Quadrangle:** Tustin 7.5'  
**Area:** 2,800 acres  
**Key Words:** Gabrielino, Irvine Ranch, Pleistocene, Old Paralic and Alluvial Fan Deposits, Quaternary Younger Deposits, Late Pleistocene fossils, Prehistoric habitations, Prehistoric Burials

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## EXECUTIVE SUMMARY

The purpose of this study was to determine the potential effects on paleontological, archaeological and historical resources of current planned development of the Irvine Business Complex, City of Irvine, California. This study was requested by the City of Irvine to meet their responsibilities as the lead agency under California Environmental Quality Act.

The 2,800-acre Irvine Business Complex (IBC) comprises Planning Area 36 in the City of Irvine, in south/central Orange County. The IBC is generally bounded by the former Tustin Marine Corps Air Station (MCAS) to the north, the San Diego Creek channel to the east, John Wayne Airport and Campus Drive to the south and State Route 55 (SR-55) to the west (Figure 3). The San Diego (I-405) Freeway traverses the southern portion of the IBC, and the Santa Ana (1-5) Freeway is located to the north and east. The IBC is bordered by the cities of Newport Beach to the south, Santa Ana and Costa Mesa to the west, and Tustin to the north. A 40-acre parcel of the IBC is detached and located to the south of the main IBC boundary area and is bounded by Jamboree Road, Fairchild Road, Macarthur Boulevard and the San Joaquin Marsh and is adjacent to the City of Newport Beach. The prominent land use in the IBC is office, with substantial amounts of industrial/warehouse uses and medium- and high-density residential uses totaling 4,524 existing dwelling units.

**Paleontology.** Several geologic units are mapped within the project boundary. The oldest material is late to middle Pleistocene (500,000-10,000 years old) old paralic (coastal plain) deposits capped by alluvial fan material. Adjacent to and possibly capping these older deposits are Holocene to late Pleistocene (less than 120,000 years old) alluvial fan and axial channel deposits.

Many fossils have been found within the IBC boundaries during City-required paleontological monitoring. The IBC fossils were recovered at depths of 8 to 25 feet below the surface. Most of these fossils have been associated with an olive-green clay layer and sandy silt sediments above and below the clay. These fossiliferous sediments have been encountered between 6 to 25 feet below the modern surface over a wide area of Irvine. Fossils associated with IBC residential projects include herbivores, carnivores, rabbits, rodents, birds, reptiles and amphibians. The herbivores include mammoth, mastodon, giant ground sloth, bison, camel, llama, horse, tapir, peccary, deer, pronghorn and dwarf pronghorn. The carnivores include bear, sabertoothed cat, jaguar, bobcat, dire wolf, coyote, gray fox, raccoon, weasel, badger, skunk and sea otter. Birds known are turkey vulture and duck. The smaller animals include many types of rabbits, rats, mice, gophers, woodrats, moles, shrews, lizards, snakes and salamanders.

Scientifically important fossils are being recovered from the IBC and many other areas of Irvine at depths of six feet or more below the surface. The known fossils from the project area are all from the Pleistocene Epoch and represent the last Ice Age (40-10 thousand years ago). However, deeper sediments are also likely to produce scientifically significant fossils.

Major collections of IBC fossils have no reports and the fossils are not in museums. There is a procedural failure to document that adequate mitigation is being performed, reports are being

written and submitted and that fossils are sent to museums for curation as required by the City of Irvine Cultural Resources Element of the General Plan.

**Archaeology.** Prehistoric peoples utilized coastal southern California from 14,000 years before present to historic contact. Archaeological evidence indicates small, mobile foraging groups throughout most of time. Late sites area relatively large and contain hearths, mortuary features, and houses. Early subsistence focused on exploitation of lagoon conditions with extensive shellfish, shark and fish. Later sites reflect a much broader strategy that targeted terrestrial mammals and birds from the freshwater marsh and coastal prairies, as well as fish and shellfish. The hunting toolkit changes over time from atlatl and dart to bow and arrow. The fishing toolkit changes from bone gorges to circular shell fish hooks. The plant processing toolkit changes from manos and metates to mortars and pestles.

The project area is within the traditional tribal territory of the Tongva or Gabrielino beginning approximately 3000 years before present. The Tongva/Gabrielino speak a language that is part of the Takic language family originating in the Great Basin. Their prehistoric tool kit demonstrates strong links to other desert peoples. Their territory encompassed a vast area stretching from Topanga Canyon in the northwest, to the base of Mount Wilson in the north, to San Bernardino in the east, Aliso Creek in the southeast and the Southern Channel Islands, in all an area of more than 2,500 square miles. At European contact, the tribe consisted of more than 5,000 people living in various settlements throughout the area. Some of the villages could be quite large, housing up to 150 people.

There are 3 recorded archaeological sites within the project area. There are 22 archaeological sites known within a one-mile radius of the project area; mostly to the east and south. Some 70 archaeological studies are on file for projects within the project boundaries and a one-mile radius.

Site P-30-000195 was mostly destroyed by construction of the Jamboree eastern on-ramp of the 405 freeway in 1967. Salvage excavations were conducted for Caltrans. Later additional excavations into the remaining portion of the site were conducted in 1974. The site was deposited between 5 to 1 thousand years before present. The site contained sixteen burials, eleven cooking features, numerous ground and chipped stone tools, ornaments and ceremonial objects and a large variety of food refuse. This site was associated with a historic ranch.

Site P-30-000196 within the project area was destroyed in the early 1970s by development of Michelson Drive and the Fluor Building. Testing and data recovery excavations were conducted in the remaining portion in 1976 and 1979. The results demonstrate similarity to 195 including the same types of features including three burials, contemporaneous time periods represented and similar artifacts. The portion of the site with burials was preserved in place and exempted from future development activities. This site also had 19th Century debris. The location was thought to be the location of a Mission San Juan Capistrano outpost dating to the 1820s and subsequently home to Jose Sepulveda. Surface collection and excavations failed to reveal any remnant of buildings but did recover typical trash of the period including brownware pottery.

Site P-30-000121 was located in the southeastern portion of IBC. The site was been destroyed by development activities subsequent to extensive archaeological testing and data recovery excavations. The major occupations occurred 4-1 years before present; also similar to 195. Late prehistoric and historic contact layers are also present. The site contained some burials, cooking features, numerous ground and chipped stone tools, ornaments and ceremonial objects and a large variety of food refuse.

The vast majority of the project area has no known archaeological resources. There are 3 recorded sites within the project area but they appear to have been severely impacted by previous development. Only 29 IBC residential projects have assessment reports on file and only 7 have monitoring reports. However, early commercial development of the IBC predates CEQA. There is a procedural failure to document that sensitive areas are being adequately mitigated, reports written and submitted and that collections are sent to museums for curation as required by the City of Irvine Cultural Resources Element of the General Plan.

**History.** Historic uses of the project lands are known to have been ranching and agriculture. Agricultural fields and three ranch houses or related outbuilding, along Barranca and Redhill, are visible in the 1952 aerial of the project. By 1965 the only additional development was a commercial building at the corner of MacArthur and Campus. By 1972 the 405 freeway was constructed and significant commercial development had occurred. By 1980 only a couple of fields were left and most of the IBC was developed. By 2004 the IBC was beginning to undergo redevelopment as old structures were removed and new ones built.

No historic structures are extant but scattered ranching debris can be expected throughout the IBC. Generally, this debris does not meet significance criteria under CEQA.

**Recommendations.** The City of Irvine appears to have diligently required mitigation of construction activities within the IBC. However, post-mitigation documentation and curation is not being effectively tracked to insure compliance with City requirements. In particular, reports are not being written and filed as required nor are fossils and artifacts being transferred to museums as required.

The Cultural Resource Element of the City of Irvine General Plan needs to be updated and contain specific language to insure that policies are actually implemented. The sensitivity maps (Figures E-1 and E-2) should not be utilized for planning purposes unless updated at minimum five year intervals. The revised language should specify that museum specimen numbers must be included in reports, along with a letter from the museum stating that the fossils are in their possession, and require that reports be submitted to the City and repository before any developer can receive a final occupancy permit.

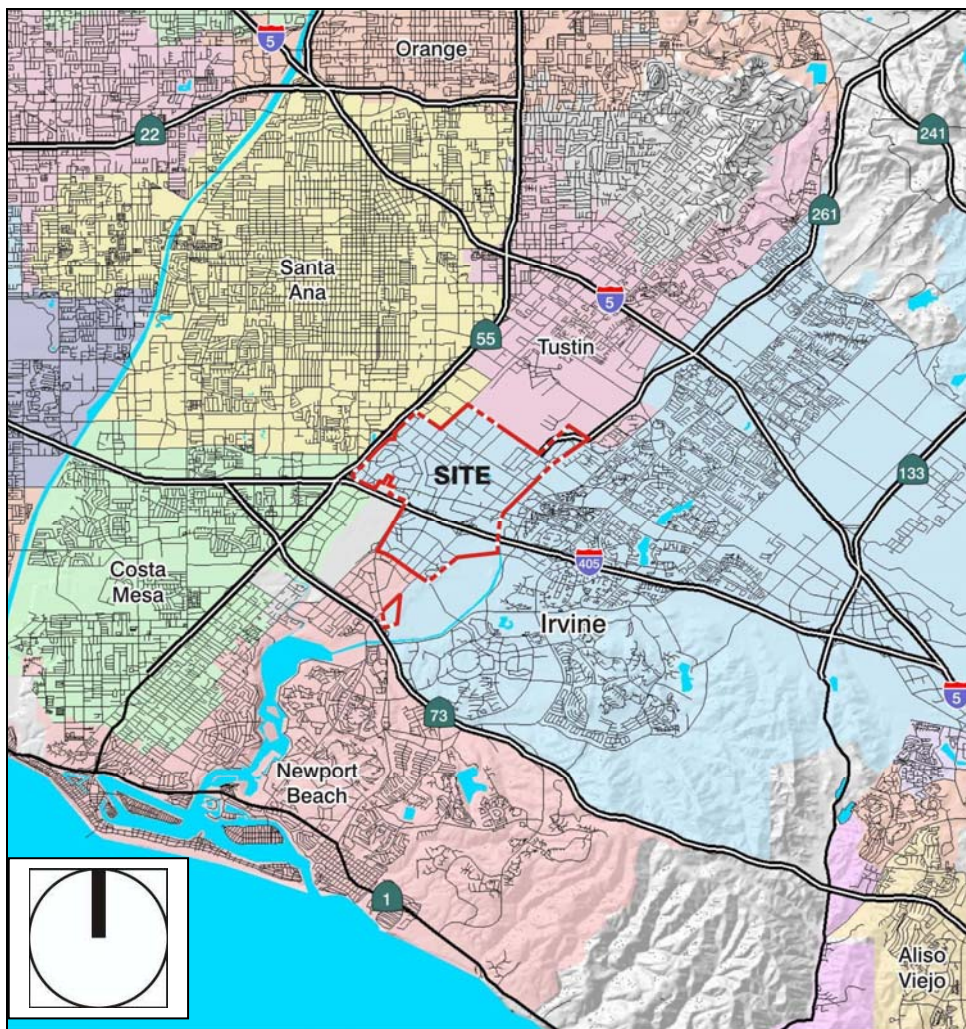
The entire IBC is sensitive for paleontological resources at levels more than eight feet below the surface. The portion south of Interstate 405 and east of Jamboree contains recorded archaeological sites that appear to have been destroyed by development subsequent to archaeological excavations. The remainder of the IBC has no known archaeological or historical sites.



## INTRODUCTION

### PURPOSE OF STUDY

The purpose of this study was to determine the potential effects on paleontological, archaeological and historical resources of current planned development of the Irvine Business Complex, City of Irvine, California (Figure 1). This study was requested by the City of Irvine to meet their responsibilities as the lead agency under California Environmental Quality Act (CEQA).



**Figure 1. Project Location**

## PROJECT DESCRIPTION

The 2,800-acre Irvine Business Complex (IBC) comprises Planning Area 36 in the City of Irvine, in south/central Orange County. The project is located on the Tustin 7.5' USGS topographic quadrangle in: Sections 29 through 33 of Township 5 south, Range 9 west; Section 36 of Township 5 south, Range 10 west; Sections 5 through 8 of Township 6 south, Range 9 west; and Section 18 of Township 6 south, Range 9 west (Figure 2).

The IBC is generally bounded by the former Tustin Marine Corps Air Station (MCAS) to the north, the San Diego Creek channel to the east, John Wayne Airport and Campus Drive to the south and State Route 55 (SR-55) to the west (Figure 3). The San Diego (I-405) Freeway traverses the southern portion of the IBC, and the Santa Ana (I-5) Freeway is located to the north and east. The IBC is bordered by the cities of Newport Beach to the south, Santa Ana and Costa Mesa to the west, and Tustin to the north. A 40-acre parcel of the IBC is detached and located to the south of the main IBC boundary area and is bounded by Jamboree Road, Fairchild Road, Macarthur Boulevard and the San Joaquin Marsh and is adjacent to the City of Newport Beach. The prominent land use in the IBC is office, with substantial amounts of industrial/warehouse uses and medium- and high-density residential uses totaling 4,524 existing dwelling units.

The General Plan and Zoning designations for the IBC generally encourage heavy industrial uses north of Barranca Parkway, and mixed-use development, including residential uses, south of Barranca Parkway. Development applications have been filed and increased in the past few years (since early 2004) and continue to be filed for the reuse of existing sites in the IBC from nonresidential uses to high-density, urban-style residential development. Continuing a process that began in the late 1980's, the City renewed its efforts to ensure proper planning for residential uses in the IBC in 2005 by embarking on a process to create a comprehensively planned mixed-use "neighborhood" to maintain a high quality of life for both residents and employees.

The result was the IBC Vision Plan, a policy framework which outlined goals and design guidelines for residential and mixed-use developments that would promote a pedestrian and transit friendly environment with strong design elements, while protecting existing businesses from potential impacts of new residential uses in the area. The IBC Vision Plan was supplemented by a proposed set of new development criteria for the area and a \$64 million program of proposed infrastructure enhancements and amenities to create a pedestrian-friendly neighborhood. The City Council gave its support to the IBC Vision Plan in July 2006, directing that an Environmental Impact Report be prepared and that necessary steps be taken to formally adopt the Vision Plan.

In early 2007, the City Council appointed an IBC Task Force to study implementation for the IBC Vision Plan, including public outreach, infrastructure funding and priorities, and planning for park and recreation facilities. The Task Force reported its findings to the City Council on February 26, 2008. At this meeting, the City Council voted to proceed with preparation of a Program EIR for the Vision Plan, which looks at a maximum dwelling unit cap of 15,000 units in the IBC. The IBC Vision Plan can be found on file at the City of Irvine, 1 Civic Center Plaza, Irvine, CA 92623 and on the City of Irvine's website.

The IBC Vision Plan and Mixed Use Overlay Zoning Code (proposed project) would allow for an increase in total units within the Irvine Business Complex (Planning Area 36) from 9,401 units to 15,000 units. In addition, a total of 1,191 density bonus units would be allowed in accordance with State Law for a total 16,191 units. The current General Plan allows for 53,461,052 square feet of office equivalency in Planning Area 36. The total 5,599 additional new units remaining under the 15,000 unit cap would be offset by a reduction of 2,715,062 square feet of non-residential office equivalency square footage, reducing the number to 50,899,418 square feet. If approved, the remaining unused non-residential intensity allowed by the adopted General Plan would be 6,380,955 square feet and 458 hotel rooms based on the existing trip caps for the IBC. The proposed project consists of the following components:

## **IBC Vision Plan Framework**

The IBC Vision Plan outlines the City's policies and objectives for addressing residential and mixed-use development within the IBC. The framework for the IBC Vision Plan provides the land use and urban design structure by which new residential development would be organized and would ensure the development of high quality, sustainable neighborhoods, and a mixture of uses. Several infrastructure improvements would be proposed throughout the IBC.

The proposed project involves the construction of five pedestrian bridges, with four located along Jamboree Road and the fifth located along the San Diego Creek. Three of the bridges are intended to be primary bridges and would serve as an entry statement into the IBC and the other two are considered secondary bridges. The Michelson Bridge would be located on Jamboree Road north of Michelson Drive and would serve as an IBC entry statement. The other two entry-statement bridges would be located south of Main Street and in the vicinity of Dupont Drive. The two secondary pedestrian bridges would be located north of Main Street (at the Barranca Channel) and the other south of Alton Parkway. The secondary bridges are envisioned to be developed as concrete structures and would either be precast or cast-in-place, while the primary bridges would be more stylistically significant such as a steel arch bridge type. The proposed bridges are intended to improve pedestrian connectivity between uses along the Jamboree Road corridor.

San Diego Creek defines the eastern boundary of the IBC and serves as an integral component of the regional open space network connecting the Orange County Great Park, Irvine Open Space Preserve, and the Upper Newport Bay Ecologic Reserve. Improvements include implementation of new hardscape and landscape and constructing new bike and pedestrian-friendly bridges in the Creekwalk area. A new freestanding bridge, exclusively for bike and pedestrian usage, would be installed over the San Diego Creek in the vicinity of the projection of McGaw Avenue or at San Marco Park on the east side of the creek. This structure would be located at the heart of the Creekwalk area and would be designed as a stylistically-significant structure. In addition, an increment of approximately 12-foot wide would be added to existing roadway bridges to provide for separated bike and pedestrian usages. These bridge-widening enhancements would occur at the Main Street, Alton Parkway and Barranca Parkway crossings over the San Diego Creek.

The existing sidewalk improvement program will continue to be implemented and embellished with enhanced standards for improved walkability and connectivity to create an interconnected system of pedestrian-friendly boulevards, avenues and streets. The program calls for the installation of sidewalks to fill the gaps in the IBC sidewalk system and provides for the installation of an eight-foot wide sidewalk behind eight feet of landscaped parkway.

A branch library and related parking necessary to serve the library would also be one of the important IBC Vision Plan components. The library location has not been determined, but it would serve the residents of the IBC community, as well as surrounding Irvine communities. Furthermore, an Opticom system would be installed at each signal location and in all applicable emergency vehicles to allow for these vehicles to “pre-empt” normal operation of the traffic signals within the IBC area in order to decrease the emergency response time.

### **IBC Districts**

The IBC was originally planned as a business complex and at present, there is little distinctiveness or character between its different areas. The IBC Vision Plan attempts to address this lack of distinctiveness and character by creating three districts, each with its own unique identity and character. The purpose of creating different districts is to influence the pattern of development and land uses within each district. This would be achieved through a range of land uses, development types, scale of buildings, the streetscape design, and setbacks. As a whole, the districts would create distinct areas that will become the focus for the activity or facility within each district and together they will create a unique ‘sense of place’ within the City of Irvine.

### **Multi Use (MU)**

The Multi Use District would include the portions of the IBC with large existing multi-use development on sites that may allow for more intensification. Streets throughout the district are currently automobile-oriented; however, the vision is to create a shared automobile-pedestrian scale environment.

### **Urban Neighborhood (UN)**

The Urban Neighborhood District would include the majority of the IBC and allows a range of land uses and buildings of up to seven stories. Generally, these neighborhoods are envisioned to be primarily residential with retail, offices and restaurants allowed on the first floor.

### **Business Complex (BC)**

The Business Complex District would be applied to portions of the IBC characterized by existing longstanding industrial uses that are expected to remain. This district accommodates new industrial uses and an expansion of existing uses.

### **General Plan Amendment**

The General Plan Amendment would establish a cap of 15,000 dwelling units for the IBC area (excluding density bonus units pursuant to state law), with an offsetting reduction of non-residential office equivalency square footage for units under the cap that have not yet been approved. The General Plan/Zoning cap for the IBC is currently set at 9,401 residential units; therefore, a unit cap of 15,000 units would provide for a potential of 5,599 additional dwelling units (of which 2,522 are currently in process) in the IBC beyond that which is already existing or approved.

The 9,401 units within the General Plan/Zoning Cap are distributed as follows: 4,524 existing residential units, 2,111 units are under construction, and 2,766 are approved units. The 9,401 existing/approved/under construction units, plus the 2,522 units currently in process, equal a total of 11,923 units, which would therefore yield a potential of 3,077 new units under the proposed 15,000 unit cap. The details (location, timing, density and design) of these 3,077 are unknown because there are no currently pending applications for these units. In addition to the 15,000 unit cap, project environmental documents address the potential for 1,191 additional density bonus units, which are excluded from local intensity limitations by state law, as follows:

- 110 known density bonus units from pending projects
- A theoretical maximum of 1,081 density bonus units, assuming the remaining 3,077 units are built with a maximum allowable additional density bonus of 35 percent

The current General Plan allows for 53,461,052 square feet of office equivalency in Planning Area 36. The total 5,599 additional new units (either potential or in process) remaining under the 15,000 unit cap would be offset by a reduction of 2,715,062 square feet of non-residential office equivalency square footage, reducing the number to 50,899,418 square feet. Construction of the 2,522 units in process is assumed to be completed by 2013, and the remaining 3,077 units, along with the above-mentioned reallocation of land uses, would be completed at City buildout estimated to be post-2030. The General Plan Amendment would also add new policy language to the current Land Use Element text and add the IBC Vision Plan framework as a new Land Use Element to incorporate the IBC Vision Plan.

For the district areas of the proposed IBC Vision Plan in which residential uses would be supported (Urban Neighborhood and Multi-Use, and excluding the Business Complex district on Construction Circle and west of the Armstrong Channel), a total potential of 9,096,017 non-residential square feet and 458 hotel rooms remain to be built based on the existing trip caps for the area. The theoretical conversion of this remaining potential non-residential development to residential units would yield a potential total of 24,535 additional units beyond the 9,401 existing and approved units noted above, assuming a theoretical, but unlikely worst case scenario in which the entire remaining development potential in the IBC would be residential.

As a part of General Plan Amendment, the existing IBC density cap of 52 dwelling units per acre would be removed from the Land Use Element Table A-1 and a minimum of 30 units per acre would be added as a density requirement. As a result, future residential projects would not have a restriction on maximum density, although would have to comply with a minimum density of 30 units per acre to ensure the benefit of higher-density housing necessary to establish a vibrant mixed-use community.

The General Plan Amendment would also add several new changes to text and figures of the General Plan, including: policies regarding pedestrian-oriented streets to the Circulation Element; IBC trails network to Circulation Element; new policies and objectives for noise in mixed-use areas; new noise and land-use noise compatibility standards to Noise Element F; and policies regarding urban parks to the Parks and Recreation Element.

### **Zoning Ordinance Amendment**

The Zoning Ordinance Amendment would add new Chapter 5-8 to adopt the IBC Mixed Use Overlay Zone, which would define regulatory zoning districts for properties within the IBC, and outline a process for analysis of compatibility of residential development with adjacent businesses. The amendment would also revise the statistical analysis outlined in Section 9-36-5, *Statistical Analysis*, of the City's Zoning Ordinance, to establish a residential cap of 15,000 dwelling units for the IBC area (excluding density bonus units pursuant to state law), with an offsetting reduction of non-residential office equivalency square footage, for units under the cap not yet approved, consistent with the proposed General Plan Amendment. Furthermore, the amendment would also update the Chapter 9-36, *Planning Area 36 (Irvine Business Complex)*, provisions regarding the IBC traffic mitigation fee program.

### **Municipal Code Amendment**

The Municipal Code Amendment would revise Chapter 10, Dedications, of Division 5, Subdivisions, of the City's Municipal Code, by adding a section for reservations to incorporate new urban park standards into the City's park dedication requirements for the IBC.

### **Optimizing Land Use**

A program of optimizing land uses in the IBC for remaining unbuilt IBC Zoning potential and approvals would be created within existing IBC vehicle trip allocations by Traffic Analysis Zone (TAZ), including:

- Conversion of office, manufacturing and/or warehouse uses to retail use to accommodate demand from current and planned residential development.
- Buildout of remaining non-residential zoning potential.
- Recycling of under-utilized properties to higher-intensity uses.

The reallocation of land uses under this program would not change the development intensity assigned to each parcel per the 1992 IBC rezoning program, with the exception of parcels with unutilized zoning potential/approvals. Unutilized zoning potential/approvals for these parcels have been combined within each TAZ to allow a larger amount of zoning potential to accommodate reuse of underutilized land uses to higher-intensity uses.



### **Design Guidelines**

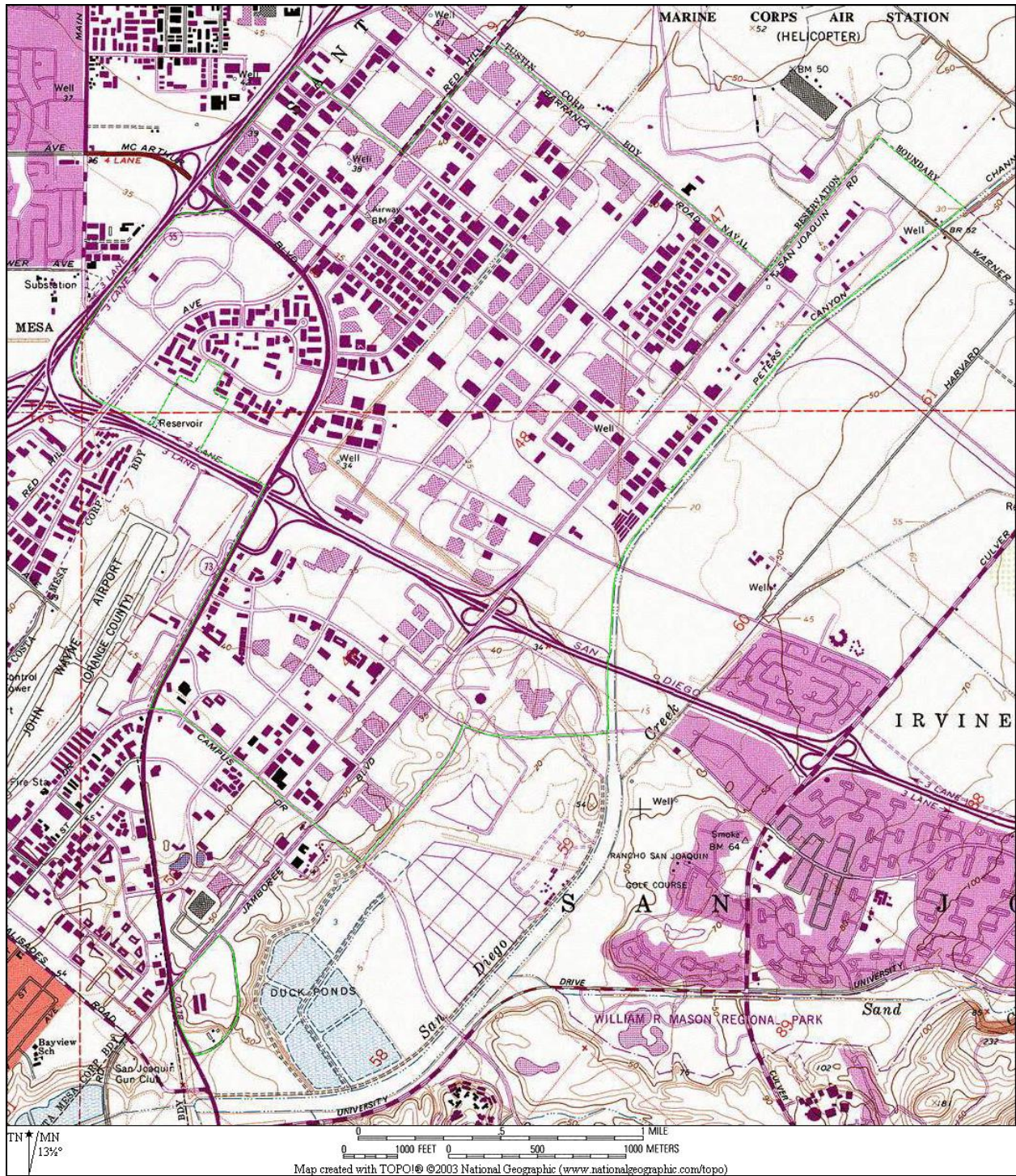
To ensure a consistent standard of residential design quality throughout the IBC, a set of design guidelines from the IBC Vision Plan that would be applicable to new residential mixed-use projects in the IBC would be adopted. These design guidelines are intended to guide the physical development of any residential or mixed-use project that contains a component of residential use located within the boundaries of the IBC. They are intended to assist in ensuring that the design of each development remains true to the principles established in the IBC Vision Plan. The guidelines would also provide standards and criteria for new construction and for remodels or additions.

### **Subsequent Development Pursuant to the Proposed Project**

The 2,522 pending units identified in Table 3-1 include the following proposed projects for which applications are currently on file with the City, and which will be evaluated in the EIR:

- Martin St Condos- 2301 Martin Street: 82 residential condominium units in a four-story building, over two levels of parking, on a 2.02-acre site.
- 2851 Alton- Northwest corner of Alton Parkway and Murphy: 170 residential condominiums units in a four story-building wrapped around a four-level parking garage, on a 3.72-acre site.
- Avalon II- 16901 Jamboree: 144 base units (plus 35 density bonus units) in a four- to five-story building, on a 2.8-acre site.
- Irvine Technology Center- Northwest corner of Jamboree and Campus Drive: 1,000 residential units: 44,000 square feet of office, 30,000 square feet of retail, on an 18.84-acre site.
- 16542 Millikan- Southwest corner of Barranca and Millikan: 151 residential units in a four-story podium building over two levels of parking, on a 3.03-acre site
- 17150 Von Karman: 469 residential units in a five-story podium over three-story parking and four stories wrapped around a four-level parking garage, on a 9.15-acre site.
- 16952 Millikan- Northeast corner of Alton and Millikan: 126 residential units (plus 30 density bonus units) in a four-story building wrapped around a parking garage, on a 2.53-acre site
- Mountain Vista- 2501 Alton- Northwest corner of Alton and Millikan: 186 residential condominium units in a four-story podium building over two levels of parking, on a 3.91-acre site
- 2852 Kelvin: 194 residential apartments in a four story-building wrapped around a parking garage, on a 3.2-acre site

The locations of these projects are provided (Figure 4). It is anticipated that following the certification of this EIR, the City will proceed with the processing of the applications associated with each of these projects.



**Figure 2. Project Topographic Map**





Figure 3. Project Aerial Map

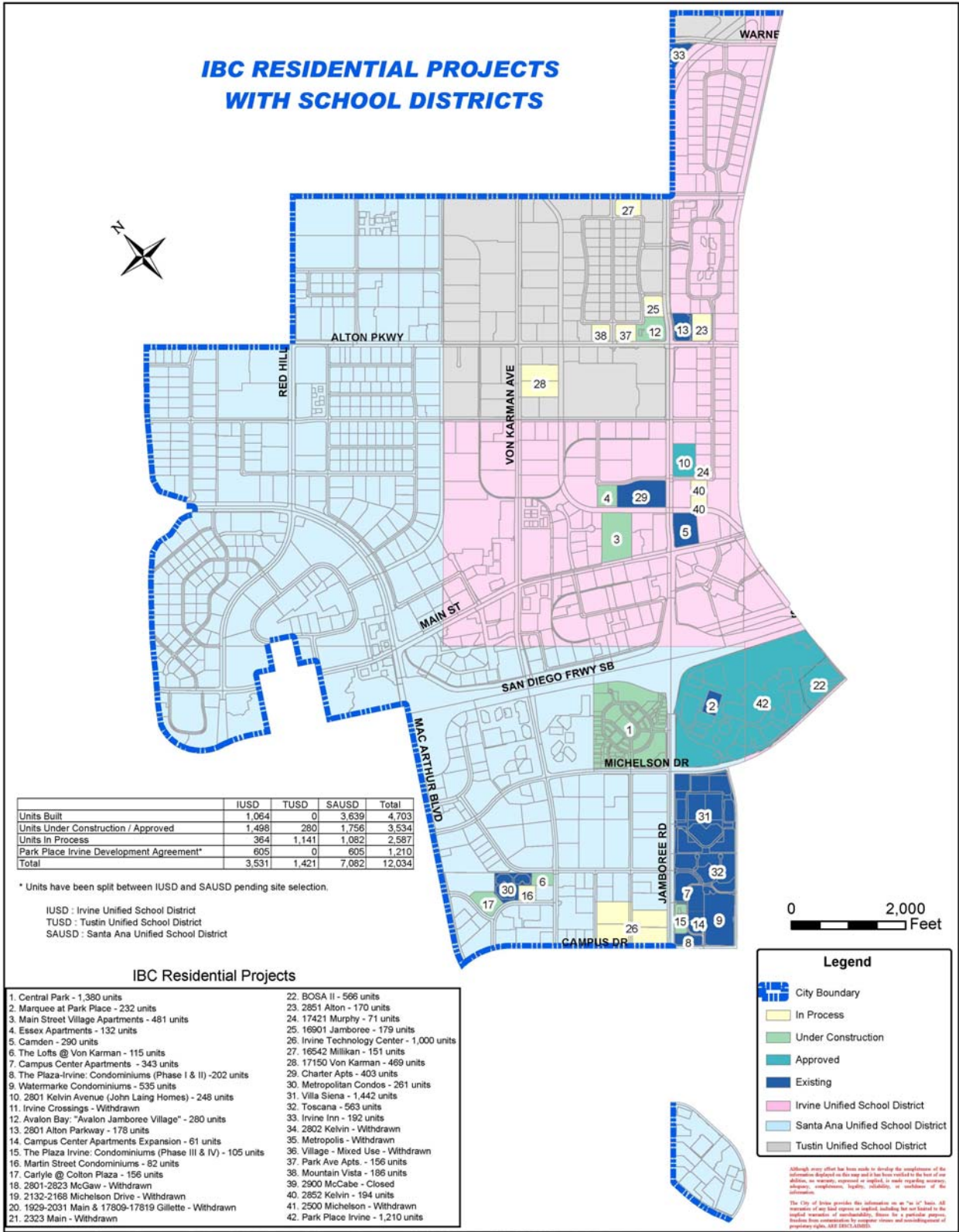


Figure 4. Project Residential Map

## **PROJECT PERSONNEL**

Cogstone Resource Management conducted the cultural resource studies. Sherri Gust served as the Principal Investigator for the project, performed the record search and research and wrote the majority of the report. Gust is a Registered Professional Archaeologist and a Qualified Principal Paleontologist. She has an M.S. in Anatomy (Evolutionary Morphology) from the University of Southern California, a B.S. in Anthropology from the University of California at Davis and over twenty-five years of experience in California.

Kim Scott provided the geological background and mapping for this report. Scott holds a B.S. in Geology with an emphasis in Paleontology from the University of California, Los Angeles and has more than 12 years of experience. Qualifications of staff are provided (Appendix A).

## **LAWS AND REGULATIONS**

The following discussion of applicable federal and state laws has been excerpted and reordered from the California Department of Transportation's on-line Environmental Handbook (2001, 2003). The Irvine Business Complex Project is subject to state and local laws regarding cultural resources.

### **CALIFORNIA ENVIRONMENTAL QUALITY ACT OF 1970**

CEQA declares that it is state policy to "take all action necessary to provide the people of this state with...historic environmental qualities." It further states that public or private projects financed or approved by the state are subject to environmental review by the state. All such projects, unless entitled to an exemption, may proceed only after this requirement has been satisfied. CEQA requires detailed studies that analyze the environmental effects of a proposed project. In the event that a project is determined to have a potential significant environmental effect, the act requires that alternative plans and mitigation measures be considered.

CEQA includes historic and archaeological resources as integral features of the environment. If



paleontological resources are identified as being within the proposed project area, the sponsoring agency must take those resources into consideration when evaluating project effects. The level of consideration may vary with the importance of the resource.

## **CALIFORNIA REGISTER OF HISTORICAL RESOURCES**

Public Resources Code § 5024.1 establishes the California Register of Historical Resources. The register is listing of all properties considered to be significant historical resources in the state. The California Register includes all properties listed or determined eligible for listing on the National Register, including properties evaluated under Section 106, and State Historical Landmarks from No. 770 on. The criteria for listing are the same as those of the National Register. The California Register statute specifically provides that historical resources listed, determined eligible for listing on the California Register by the State Historical Resources Commission, or resources that meet the California Register criteria are resources which must be given consideration under CEQA (see above). Other resources, such as resources listed on local registers of historic registers or in local surveys, may be listed if they are determined by the State Historic Resources Commission to be significant in accordance with criteria and procedures to be adopted by the Commission and are nominated; their listing in the California Register, is not automatic.

Resources eligible for listing include buildings, sites, structures, objects, or historic districts that retain historic integrity and are historically significant at the local, state or national level under one or more of the following four criteria:

- A) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
- B) It is associated with the lives of persons important to local, California, or national history;
- C) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
- D) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition to having significance, resources must have integrity for the period of significance. The period of significance is the date or span of time within which significant events transpired, or significant individuals made their important contributions. Integrity is the authenticity of a historical resource's physical identity as evidenced by the survival of characteristics or historic fabric that existed during the resource's period of significance. Alterations to a resource or changes in its use over time may have historical, cultural, or architectural significance. Simply, resources must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. A resource that has lost its historic character or appearance may still have sufficient integrity for the California Register, if, under Criterion D, it maintains the potential to yield significant scientific or historical information or specific data.

## **LOCAL REGULATIONS**

The City of Irvine General Plan includes Element E on Cultural Resources. It recognizes the importance of historical, archaeological and paleontological resources in the City and establishes a process for their early identification, consideration, and where appropriate, preservation. It requires assessment of potential resources on projects and utilizes planning policies, ordinances, approval conditions and mitigation measures to protect the resources.

### **ELEMENT E: CULTURAL RESOURCES**

**GOAL: Ensure the proper disposition of historical, archaeological, and paleontological resources to minimize adverse impacts, and to develop an increased understanding and appreciation for the community's historic and prehistoric heritage, and that of the region.**

#### **Description of Cultural Resources:**

This element recognizes the importance of historical, archaeological, and paleontological resources in the City of Irvine, and establishes a process for their early identification, consideration, and where appropriate, preservation.

#### ***Paleontological Sensitivity Zones:***

To develop Figure E-2, known fossil occurrences were identified and plotted. The locality information and past fossil production in adjacent areas was used to develop zones of similar paleontological potential or sensitivity. Four Paleontological sensitivity zones were developed to group rocks with similar paleontological potential. Each zone reflects the potential for the discovery of significant fossil resources during development of a site. The proposed use of the site does not greatly affect paleontological resources; it is the mass grading of sedimentary rocks associated with development that affects the fossils. The four sensitivity zones are:

**No Sensitivity:** Areas in this zone contain exposed volcanic rocks.

**Low Sensitivity:** Areas in this zone typically have altered or geologically young rocks exposed at the surface.

**Moderate Sensitivity:** Areas within this zone contain sedimentary rocks with limited histories of producing significant fossils. The limited histories may reflect the lack of fossils or lack of systematic exploration of exposures of these rock units.

**High Sensitivity:** This zone contains sedimentary rocks with well established histories of containing significant fossils.

## **OBJECTIVE E-1: HISTORICAL, ARCHAEOLOGICAL, PALEONTOLOGICAL SURVEYS**

**Identify and obtain information on the existence and significance of historical, archaeological, and paleontological sites and encourage land use planning which incorporates this formation.**

The following policies support Objective E-1:

**Policy (a):** Require appropriate surveys and necessary site investigations in conjunction with the earliest environmental document prepared for a project, in accordance with California Environmental Quality Act (CEQA) and the City's CEQA procedures.

**Policy (b):** Require surveys, prior to discretionary approval, for areas where the possibility of encountering sites exists. Additional specific site investigations may also be required in order to obtain sufficient information to determine the site's significance. The project sponsor shall fund this level of investigation.

**Policy (c):** Require a written report be submitted to the City following a survey or investigation describing the findings and making recommendations as to the site's significance, future disposition, and the amount of further investigation which should be undertaken. Copies of site survey records and reports shall be filed with the appropriate clearinghouse.

**Policy (d):** Encourage, if appropriate, removal of all materials collected during the survey/investigation to local museums, universities, or other depositories providing access for public review or scientific research.

**Policy (e):** Funding of Archaeological Excavations: Use the following in the case of Archaeological excavations: 75% project sponsor; 25% City or other public or quasi-public agency or organization. The costs of other mitigation measures may also be shared by the landowner or developer, the City, and other agencies or organizations.

**Policy (f):** Maintain specific locations of unprotected sites as confidential information to avoid vandalism and the resultant irretrievable loss of the historic and prehistoric record of the community.

**Policy (g):** Maintain specific locations of unprotected sites as confidential information to avoid vandalism and the resultant irretrievable loss of the historic and prehistoric record of the community.

**Policy (h):** Determine the proper disposition of each historical site prior to approval of zoning or discretionary development applications. Disposition determinations shall be based on a detailed historical report, including an inventory form, a written evaluation, and slides documenting the building and its location. This information shall be reviewed by staff and the approval authority for discretionary development cases. Each historical report shall be filed at the Irvine Historical Museum and the City of Irvine Community Development Department.

**Policy (i):** Buffer and protect the integrity of a historic site and/or resources contained therein, if the Planning Commission, during review of a discretionary development case, determines preservation is required.



## **OBJECTIVE E-2: HAZARD OCCURRENCE**

**Evaluate surveyed sites for their present and potential cultural, educational, recreational, and scientific value to the community and the region, and determine their proper disposition prior to the approval of any project which could adversely affect them.**

The following policies support Objective E-2:

**Policy (a):** Ensure that sites determined to be significant are protected through the City's planning policies, ordinances, approval conditions, and mitigation measures.

**Policy (b):** Encourage the nomination of significant historical sites to the National Registry of Historic Places.

**Policy (c):** Include sites which are appropriate for educational or recreational purposes as an integral part of either public or community facilities or as part of the Citywide bikeway, pedestrian, and equestrian trail systems. Encourage agencies, organizations, and individuals to develop interpretive and educational programs in order to properly utilize the site for the benefit of the entire community.

**Policy (d):** Ensure that appropriate staff is available to act in matters relating to the implementation of this element to include identification of costs, and to coordinate the investigation and disposition of sites between City departments and Commissions, The Irvine Company, and other agencies, institutions, organizations, and individuals.

**Policy (e):** Determine the methods and means of preservation on a case-by-case basis according to a site's importance and disposition methods available. These may include public or private acquisition or one of the following, provided extreme care is exercised not to adversely affect the site.

- Including the site within greenbelts, parks, open space spines, preservation areas or other open space.
- Covering surface or sub-surface sites by adequate fill, pavement, or buildings.
- Using the site for nondestructive public interest or educational purposes, such as museums, interpretive centers, or outdoor classrooms.
- Moving buildings for preservation as part of a consolidated historic site.
- Using significant historic buildings in a preserved state as a part of their functional capacity (e.g., a building preserved and used as an office, restaurant, or home).

**Policy (f):** Encourage site preservation through economic incentives such as increased building densities, reduced taxes, credit toward park dedication, or reduction of other amenity requirements. Where incentives are not sufficient, the land owner shall be directly compensated by the City or other public or quasi-public agencies or organizations for land preserved as an archaeological, paleontological, or historical site. The costs of site preservation may be the principal responsibility of the City, other public, or quasi-public agencies, or other organizations.

**Policy (g):** Ensure that adverse impacts of a proposed project on cultural resources are mitigated in accordance with CEQA, as well as other appropriate City policies and procedures, where preservation of a significant site is not practical.

**Policy (h):** Assign the Community Services Commission the responsibility to oversee implementation programs for sites or buildings which have been acquired by the City.

**Policy (i):** Identify and implement revenue sources which can be expended in support of this objective.

**Policy (j):** Undertake a comprehensive survey to inventory the remaining historical resources within the City of Irvine incorporated territory and adopted Sphere of Influence, including the location and significance of all

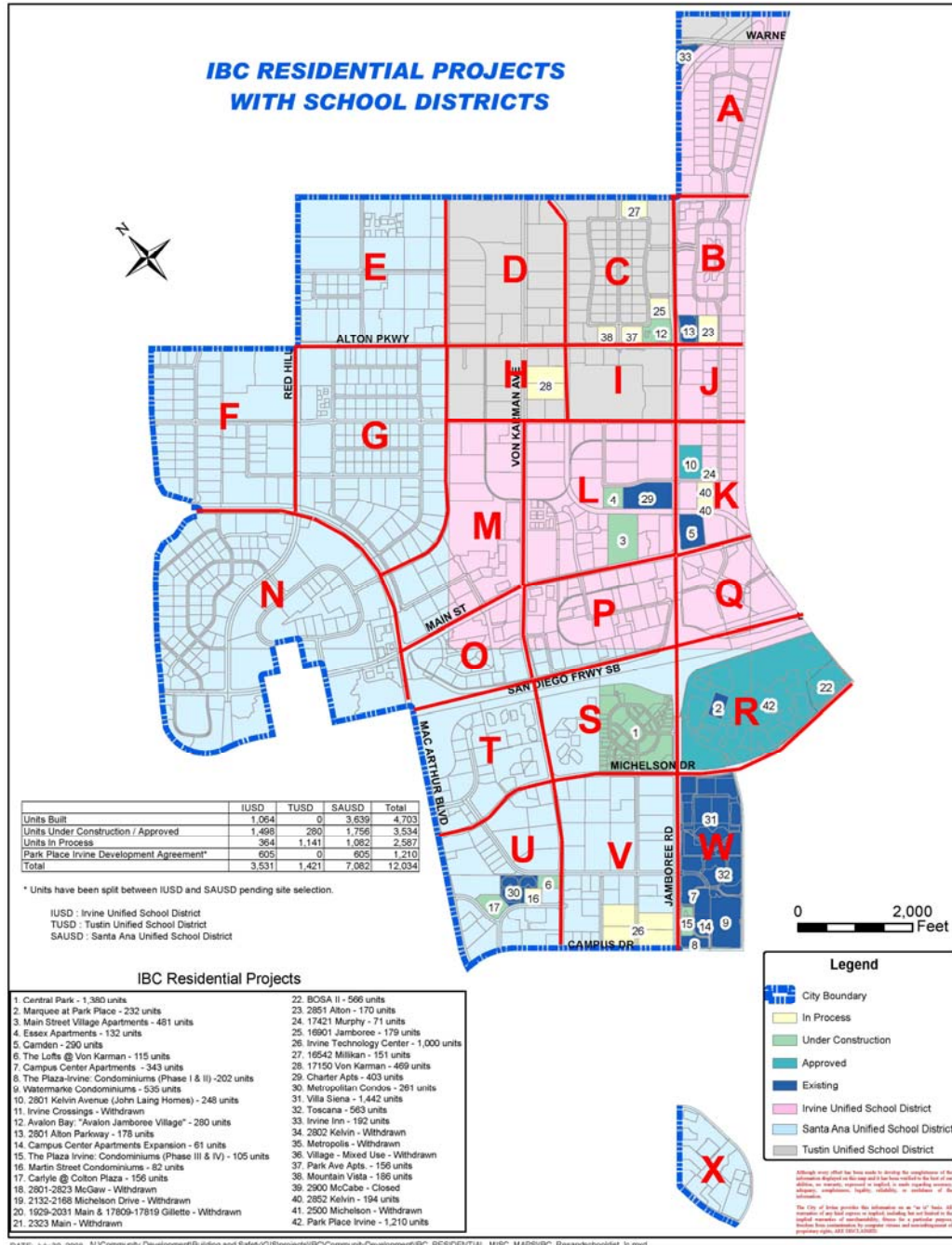
remaining tenant farm homes over 50 years of age. This survey shall be used to determine the appropriate disposition of the resources located within any area not designated for preservation as a historical resource.

### **Planning Conditions**

Prior to the issuance of the first preliminary or precise grading permit, and for any subsequent permit involving excavation to increased depth, the applicant shall provide letters from an archaeologist and a paleontologist. The letters shall state that the applicant has retained these individuals, and that the consultant(s) will be on call during all grading and other significant ground-disturbing activities. These consultants shall be selected from the roll of qualified archaeologists and paleontologists maintained by the County of Orange. The archaeologist and/or paleontologist shall meet with Community Development staff, and shall submit written recommendations specifying procedures for cultural/scientific resource surveillance and for developing mitigation plans for archaeological and paleontological resources. These recommendations shall be reviewed and approved by the Director of Community Development prior to issuance of the grading permit and prior to any surface disturbance on the project site. Should any cultural/scientific resources be discovered, no further grading shall occur in the area of the discovery until the Director of Community Development is satisfied that adequate provisions are in place to protect these resources. (*City of Irvine Standard Subdivision Condition 2.1*) Specific measures that may be required include, but are not limited to, any of the measures set forth in California Public Resources Code, Section 21083.2(i); monitored excavations; permanent curation; and the preparation, identification and permanent preservation of recovered specimens.

## REFERENCE SYSTEM FOR IBC PORTIONS

To assist with clear discussion of features of the IBC, the project area was divided into portions and each was named with a letter (Figure 5). The IBC residential project numbers are also utilized.



**Figure 5. IBC portions**

## **PALEONTOLOGY**

### **NATURAL SETTING**

The physiographical, geological, and ecological zones represented in the project area are best described as alluvial valleys of the Los Angeles basin. The basin is bounded to the north by the Santa Monica Mountains, to the east by the Santa Ana Mountains and associated hills (Puente/Chino, San Jose, and Repetto), to the south by the San Joaquin Hills and the Pacific Ocean, and to the west by the Palos Verdes Hills and the Pacific Ocean.

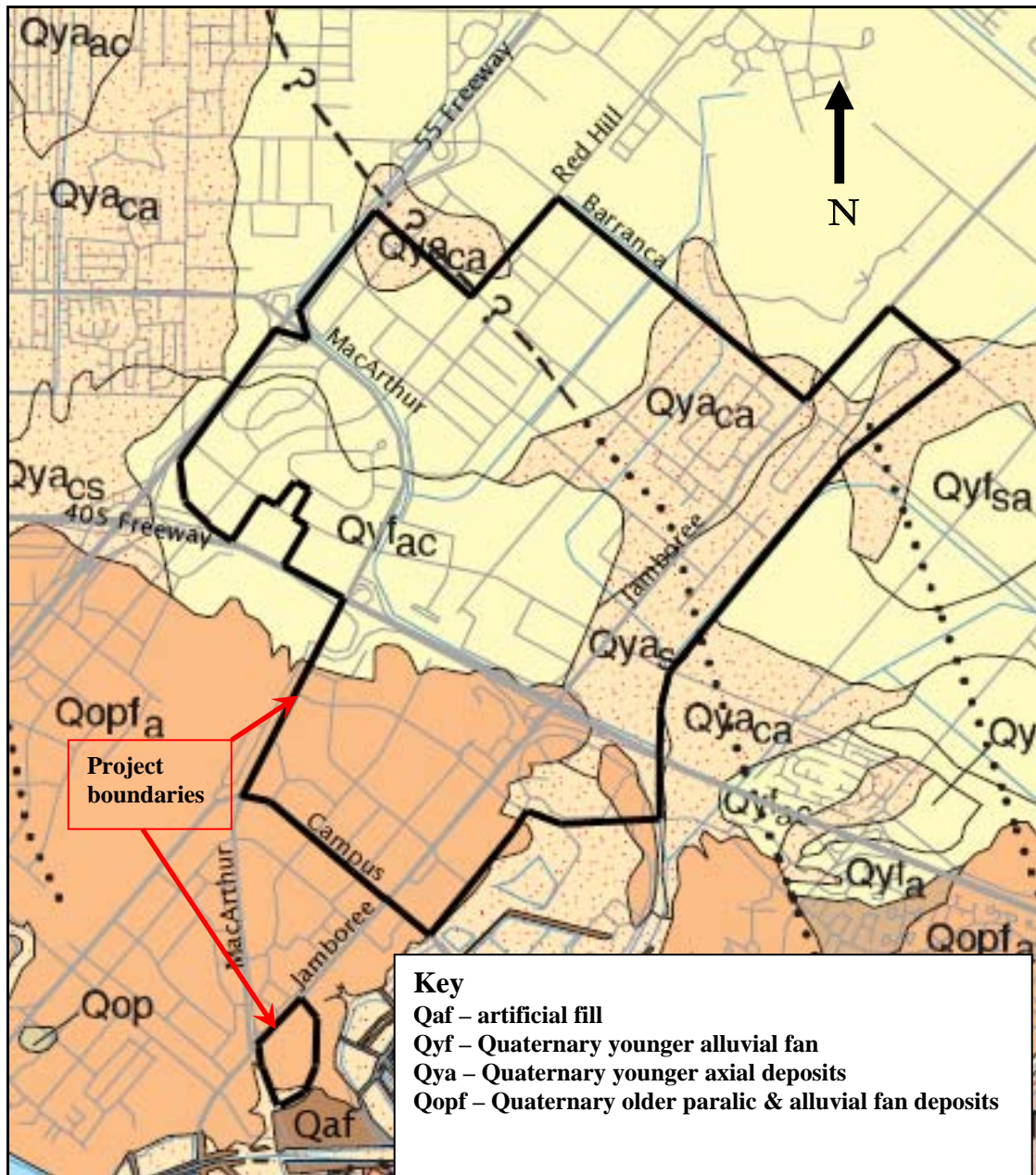
### **GEOLOGIC SETTING**

This area is part of the California geomorphic province known as the Penninsular Ranges. The following discussion of the Penninsular Range Province is provided by the California Geologic Survey (Wagner 2002):

“The Penninsular Ranges are a series of ranges separated by northwest trending valleys, subparallel to faults branching from the San Andreas Fault. The trend of the topography is similar to the Coast Ranges, but the geology is more like the Sierra Nevada, with granitic rock intruding the older metamorphic rocks. the Penninsular Ranges extend into lower Californian and are bound on the east by the Colorado Desert, The Los Angeles Basin and the island group (Santa Catalina, Santa Barbara, and the distinctly terraced San Clemente and San Nicholas islands), together with the surrounding continental shelf (cut by deep submarine fault troughs) are included in this province.”

### **STRATIGRAPHY**

Several geologic units are mapped within the project boundary. The oldest material is late to middle Pleistocene (500,000-10,000 years old) old paralic (coastal plain) deposits capped by alluvial fan material (Morton et al. 2004; Figure 6). Adjacent to and possibly capping these older deposits are Holocene to late Pleistocene (less than 120,000 years old) alluvial fan and axial channel deposits.



**Figure 6. Project Geology**

### **Quaternary Older Paralic Deposits**

Deposited from 2 million to 10,000 years ago, these sediments are common in the Los Angeles and Orange County areas. These sediments were deposited in nonmarine and fluvial environmental systems including rivers, lakes, and tides. These sediments are commonly fossiliferous. Sediments can range from clays to conglomerates and can range from a few inches to dozens of feet thick. Capping the marine-fluvial deposits are alluvial fan sediments.

### **Quaternary Younger Deposits**

More superficially in the project area, are deposits of both channel (Qya) and alluvial fan (Qyf) deposits less than 20,000 years old. Thickness of Quaternary younger alluvial sediments varies in the Santa Ana and Tustin area from a few inches to up to 30 feet. Sediments consist of clays to conglomerates depending on the local depositional environment and sediment sources. Surface sediments are typically too young to contain fossils, but deeper sediments are fossiliferous.

### **Artificial Fill**

Mapped at the southern edge of the project, adjacent to Fairchild Road, these are sediments that have recently been put in place by construction activities.

### **FOSSILS KNOWN**

The City of Irvine's paleontological sensitivity map (Figure E-2) in the Cultural Resources Element (E) of the General Plan, shows the entire IBC as having low sensitivity for fossils at the surface. However, it contains no recognition that deeper layers may contain fossils.

A search for paleontological records was completed by the Los Angeles County Museum of Natural History Department of Vertebrate Paleontology (LACMVP), online at the LACM Department of Invertebrate Paleontology (IP), online at the Museum of Paleontology at the University of California (UCMP) and in published materials. The project area and a one-mile radius were searched for resources.

The Natural History Museum of Los Angeles County has four fossil localities nearby in the same sediments as those found in the project area (Table 1; Appendix B). These localities were recovered from depths of 15 to 30 feet below surface.

**Table 1. Nearby Fossils**

| <b>Taxon</b> | <b>Common Name</b> | <b>Depth</b> | <b>LACM Locality</b> |
|--------------|--------------------|--------------|----------------------|
|--------------|--------------------|--------------|----------------------|



|                  |                      |         |             |
|------------------|----------------------|---------|-------------|
| Mammoth          | <i>Mammuthus sp.</i> | 15 ft   | LACMVP 1339 |
| Camel            | Camelidae            | 15 ft   | LACMVP 1339 |
| Turtle           | Testudinata          | 30 ft   | LACMVP 4219 |
| Camel            | Camelidae            | 30 ft   | LACMVP 4219 |
| Mammoth/mastodon | Mammuthus or Mammut  | unknown | LACMVP 3267 |

However, many fossils have been found within the IBC boundaries during City-required paleontological monitoring (Figure 7). Those associated with IBC residential projects include herbivores, carnivores, rabbits, rodents, birds, reptiles and amphibians (Table 2) (Commendador-Dugeon et al 2006a & 2006b, DeBusk and Seckel 2007, DeBusk 2008, Gust and Scott 2009, Lander 2008, Michalsky and Sample 2002, Scott and Gust 2008, Smith 2009). The herbivores include mammoth, mastodon, giant ground sloth, bison, camel, llama, horse, tapir, peccary, deer, pronghorn and dwarf pronghorn. The carnivores include bear, sabertoothed cat, jaguar, bobcat, dire wolf, coyote, gray fox, raccoon, weasel, badger, skunk and sea otter. Birds known are turkey vulture and duck. The smaller animals include many types of rabbits, rats, mice, gophers, woodrats, moles, shrews, lizards, snakes and salamanders.



**Figure 7. Mammoth skull from Central Park West (IBC 1)**

**Table 2. IBC Fossils**

| Common Name            | Genus and species                   | R IBC 31 Villa Sienna | S IBC 1 Central Park West | U IBC 17 Carlyle at Colton Plaza | W IBC 7 Campus Center Apts | W IBC 8 The Plaza-Irvine | W IBC 9 Watermarke | W IBC 14 Campus Ctr Apts Exp. | W IBC 15 Plaza Irvine Condos | W IBC 32 Toscana | X Scholle |
|------------------------|-------------------------------------|-----------------------|---------------------------|----------------------------------|----------------------------|--------------------------|--------------------|-------------------------------|------------------------------|------------------|-----------|
| <b>Large Mammals</b>   |                                     |                       |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Mammoth                | <i>Mammuthus columbi</i>            | *                     | *                         |                                  |                            |                          | *                  |                               |                              | *                |           |
| Mastodon               | <i>Mammut americanum</i>            |                       |                           |                                  |                            |                          |                    |                               |                              |                  | *         |
| Ground Sloth, Harlan's | <i>Paramylodon harlani</i>          | *                     | *                         |                                  |                            | *                        |                    | *                             |                              |                  | *         |
| Bison, Giant           | <i>Bison latifrons</i>              | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Bison, Ancient         | <i>Bison antiquus</i>               | *                     |                           |                                  |                            | *                        |                    |                               |                              | *                | *         |
| Camel, Western         | <i>Camelops hesternus</i>           | *                     | *                         |                                  |                            | *                        |                    |                               |                              |                  |           |
| Llama, Ancient         | <i>Palaeolama sp. ?</i>             | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Horse, Western         | <i>Equus cf. E. occidentalis</i>    | *                     | *                         |                                  |                            |                          |                    |                               |                              |                  |           |
| Tapir                  | <i>Tapirus californicus</i>         | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Peccary                | <i>Platygonus cf. P. compressus</i> | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Deer, Mule             | <i>Odocoileus cf. O. hemionus</i>   | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Pronghorn, Dwarf       | <i>Capromeryx minor</i>             | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Pronghorn, American    | <i>Antilocapra americana</i>        | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| <b>Carnivores</b>      |                                     |                       |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Bear, Black            | <i>Ursus americanus</i>             | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Cat, Saber-toothed     | <i>Smilodon fatalis</i>             | *                     |                           |                                  |                            | *                        |                    |                               |                              |                  |           |
| Jaguar                 | <i>Panthera onca agusta</i>         | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Bobcat                 | <i>Lynx (Felis) rufus</i>           | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Coyote                 | <i>Canis latrans</i>                | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Wolf, Dire             | <i>Canis dirus</i>                  | *                     |                           |                                  |                            |                          |                    | *                             |                              |                  |           |
| Fox, Gray              | <i>Urocyon cinereoargenteus</i>     | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Raccoon, Northern      | <i>Procyon lotor</i>                | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Weasel, Long-tailed    | <i>Mustela frenata</i>              | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Badger, American       | <i>Taxidae taxus</i>                | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Skunk, Striped         | <i>Mephitis mephitis</i>            | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |
| Otter, Sea             | <i>Enhydra lutris</i>               | *                     |                           |                                  |                            |                          |                    |                               |                              |                  |           |



| Common Name                  | Genus and species                | R IBC 31 Villa Sienna | S IBC 1 Central Park West | U IBC 17 Carlyle at Colton Plaza | W IBC 7 Campus Center Apts | W IBC 8 The Plaza-Irvine | W IBC 9 Watermark | W IBC 14 Campus Ctr Apts Exp. | W IBC 15 Plaza Irvine Condos | W IBC 32 Toscana | X Scholle |
|------------------------------|----------------------------------|-----------------------|---------------------------|----------------------------------|----------------------------|--------------------------|-------------------|-------------------------------|------------------------------|------------------|-----------|
| <b>Rabbits</b>               |                                  |                       |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Cottontail, Desert           | <i>Sylvilagus audubonii</i>      | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Rabbit, Brush                | <i>Sylvilagus bachmani</i>       | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Jackrabbit, Black-tailed     | <i>Lepus californicus</i>        | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| <b>Rodents</b>               |                                  |                       |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Ground Squirrel, California  | <i>Spermophilus beecheyi</i>     | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Gopher, Pocket               | <i>Thomomys bottae</i>           | *                     |                           |                                  |                            |                          |                   |                               |                              |                  | *         |
| Rat, Kangaroo, Agile         | <i>Dipodomys agilis</i>          | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Woodrat, Dusky footed        | <i>Neotoma fuscipes</i>          | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Woodrat, Desert              | <i>Neotoma lepida</i>            | *                     |                           |                                  |                            |                          |                   |                               |                              |                  | *         |
| Mouse, Harvest, Western      | <i>Reithrodontomys megalotus</i> | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Mouse, Imperfect             | <i>Peromyscus imperfectus</i>    | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Mouse, Grasshopper, Southern | <i>Onychomys torridus</i>        | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Vole, California             | <i>Microtus californicus</i>     | *                     |                           |                                  |                            |                          |                   |                               |                              |                  | *         |
| Mouse, Deer                  | <i>Peromyscus maniculatus</i>    | *                     |                           |                                  |                            |                          |                   |                               |                              |                  | *         |
| Mole, Broad footed           | <i>Scapanus latimanus</i>        | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Shrew, Desert                | <i>Notiosorex crawfordi</i>      | *                     |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Shrew                        | <i>Sorex?</i>                    |                       |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| <b>Birds</b>                 |                                  |                       |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Vulture, Turkey              | <i>Cathartes aura</i>            |                       | *                         |                                  |                            |                          |                   |                               |                              |                  |           |
| Duck                         | <i>Anas sp.</i>                  |                       |                           |                                  |                            | *                        |                   |                               |                              |                  |           |
| <b>Reptiles</b>              |                                  |                       |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Lizard, Alligator            | <i>Elgaria sp.</i>               |                       | *                         |                                  |                            |                          |                   |                               |                              |                  |           |
| Lizard                       | Lacertilia                       |                       |                           |                                  |                            |                          |                   |                               |                              |                  | *         |
| Snake, gopher                | <i>Pituophis melanoleucus</i>    |                       | *                         |                                  |                            |                          |                   |                               |                              |                  |           |
| Snake, ringneck              | <i>Diadophis sp.?</i>            |                       |                           |                                  |                            |                          |                   |                               |                              |                  | *         |
| Snake, typical               | Colubridae                       |                       |                           |                                  |                            |                          |                   |                               |                              |                  | *         |
| Snake, rattlesnake           | <i>Crotalus sp.</i>              |                       | *                         |                                  |                            |                          |                   |                               |                              |                  |           |
| <b>Amphibians</b>            |                                  |                       |                           |                                  |                            |                          |                   |                               |                              |                  |           |
| Salamander, Arboreal         | <i>Aneides lugubris</i>          |                       |                           |                                  |                            |                          |                   |                               |                              |                  | *         |

The IBC fossils were recovered at depths of 8 to 25 feet below the surface. Most of these fossils have been associated with an olive-green clay layer and sandy silt sediments above and below the clay. These fossiliferous sediments have been encountered between 6 to 25 feet below the modern surface over a wide area of Irvine. A project on IBC portion W called Forest City recovered mammoth/mastodon, horse and bison in association with dark, gray-green clay in 1990 (Smith 2009).

Some IBC residential projects have not encountered these sediments due to the inconsistent depth at which the fossiliferous sediments are present. For example, grading at Carlyle (IBC 17) went to approximately 15 feet below the surface but the olive-green clay was at 18 feet (according to geotechnical boring logs) and thus no fossils were recovered. No fossils were recovered during monitoring for the Campus Center Apartments (IBC 7) or the Plaza Irvine Condominiums (IBC 15) either.

Outside of the project area but nearby, additional fossils have been recovered. The IBC fossils and these nearby ones can be combined into a single fossil locality – the San Joaquin Marsh Fauna. This name unifies the fossils and acknowledges why the area was attractive to animals.

The known fossils are all from the Pleistocene Epoch and represent the last Ice Age (40-10 thousand years ago). Radiocarbon dates obtained have ranged from 25 to 8.5 thousand years before the present. It is extremely likely that these dates are erroneously young by a few thousand years since carbon has known tendency to migrate downward in the water column when subjected to repeated incursions of water such as flooding or seasonal water collection in lowlands.

Only 8 IBC residential project paleontology reports could be located. The fossils from IBC 8 and 14 (portion W, The Plaza-Irvine and Campus Center Apts. Expansion) are at the Natural History Museum of Los Angeles County but have not yet been accessioned (S. McLeod, Collection Manager, personal communication, 2009). The fossils from IBC 1 (portion S, Central Park West) are at the Museum of Paleontology, California State University at San Bernardino,

awaiting project completion before accessioning (Stuart Sumida, Museum Director, CSUSB, personal communication, 2009).

All other fossils known from IBC are in the possession of the consultant who collected them. No reports have been written or filed with the City for these projects and the fossils have not been submitted to a museum for curation. Reports for other IBC projects could not be located. Since both reports and curation are required by existing City policy and project conditions, there is a clear procedural problem that must be addressed.

## **CONCLUSIONS**

Scientifically important fossils are being recovered from the IBC and many other areas of Irvine at depths of six feet or more below the surface. There is a procedural failure to document that adequate reports are being written and submitted and that fossils are sent to museums for curation.

## ARCHAEOLOGY

### PREHISTORIC SETTING

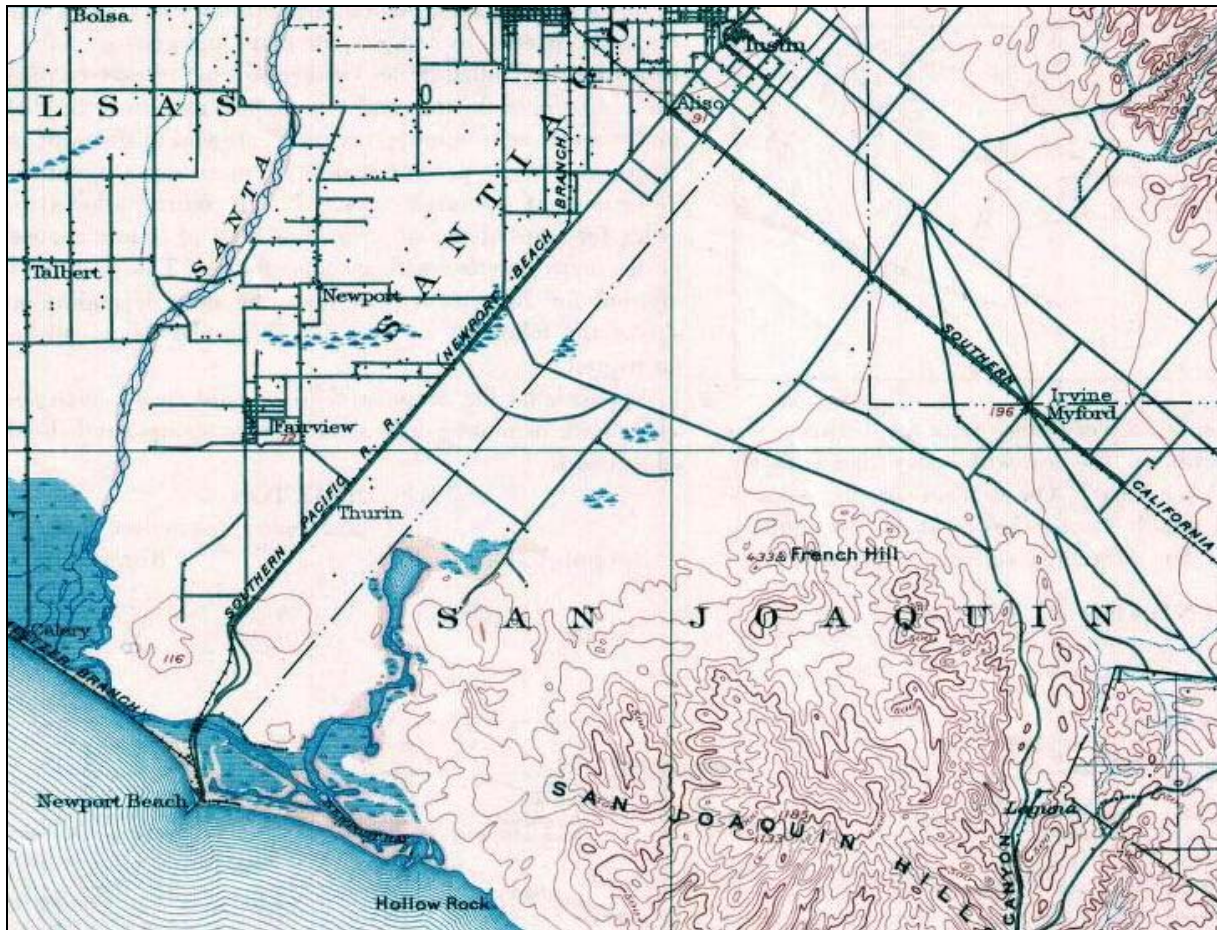
#### Natural Environment

The project area consisted open lagoon, estuary and seasonal freshwater wetlands surrounded by coastal plain (Figure 8). Freshwater sources were natural springs, runoff from the Santa Ana Mountains, seasonal flooding of the Santa Ana River and pooling of rainwater in lowland areas.

Paleoclimatic data based on pollen from coastal sites indicates that there was a dramatic increase in both annual temperature and precipitation between 8000 and 7000 BP, which would have lead to a rich marsh habitat locally. Subsequently, by 7000 BP, sea levels were 10-15 m below current levels, and the shore line was at least 500 m further off shore than today (Altschul et al 2007).

Modern San Diego “Creek” is a man-made channel created after 1920 (not present on 1919 maps; also see Figure 6) but before 1930. On 1930 maps it is depicted as Peter Canyon Channel until it crossed Delhi Road (now Barranca) when it became Delhi Channel (Blackburn 1930).

Historical land use was primarily agricultural but numerous shooting clubs were present in association with seasonal ponds. The project area began to be urbanized in the early 1970s.



**Figure 8. Project vicinity in 1902**

## **Cultural Traditions**

### **Early Millingstone Period, 8,000 to 6,500 years BP**

Archaeological evidence suggests a small and highly mobile population foraging on a seasonal basis. Coastal sites of the period have emphasis on protein sources but differ in having high frequencies of sharks and rays from the lagoon. The abundance of scallops and oysters in these early collections is consistent with relatively open lagoon conditions (Altschul et al 2005, 2007, Mason et al. 1997 and Koerper et al. 2003).

### **Late Millingstone Period, 6,500 to 3,000 years BP**

Sites from this period appear to be part of an expansion of settlement to take advantage of new habitats and resources that became available as sea levels stabilized between about six to five thousand years ago. Archaeological evidence suggests a continued pattern of small, mobile

foraging groups. Sites are dominated by shellfish (Altschul et al 2005, 2007). Gorges were used for fishing and mano/metate pairs were used to process plant materials. Most sites were in coastal areas (Mason et al. 1997 and Koerper et al. 2003).

### **Intermediate Period, 3000 to 1000 years BP**

Archaeological sites indicate the continuation of small, mobile foraging groups early in this period but later sites were relatively large and contain hearths, mortuary features, and houses. The later sites reflect a much broader strategy that targeted terrestrial mammals and birds from the freshwater marsh and coastal prairies, as well as fish and shellfish. The emergence of venus clam (*Chione*) as the predominant shellfish in almost all collections is consistent with the expansion of mudflats at this time (Altschul et al 2005, 2007). The first circular fish hooks appear in the tool kit in this period and use of plant grinding tools increases. Hunting tools consist of the atlatl and dart (Mason et al. 1997 and Koerper et al. 2003).

### **Late Period, 1000 years BP to contact**

Environmental change caused constriction of Upper Newport Bay and expansion of fresh water wetlands in the low-lying San Joaquin Marsh area. In this period the atlatl and dart hunting tools are replaced by the bow and arrow. A portion of the mano/metate inventory was gradually replaced by pestle/mortars. Use of other traditional tools continues. Settlement was expanded into the hills and canyons inland (Mason et al. 1997 and Koerper et al. 2003).

## **ETHNOGRAPHY**

### **Archaic Culture**

The nature of Native American cultural systems older than 3000 years before present in southern California remains poorly defined. Recently, it has been proposed that there may have been periodic movement of desert peoples into coastal areas as far back as 8,000 years before present (Altschul et al 2007).

### **Tongva (Gabrielino) Culture**

The project area was within the territory of the Tongva (McCawley 1996) beginning approximately 3000 years before present. The name “Gabrielino” is Spanish in origin and was used in reference to the Native Americans associated with the Mission San Gabriel. It is unknown what these people called themselves before the Spanish arrived, but today they call themselves “Tongva”, meaning “people of the earth” (Gabrielino/Tongva Tribal Council of San Gabriel n.d.).

The Tongva/Gabrielino speak a language that is part of the Takic language family originating in the Great Basin. Their prehistoric tool kit demonstrates strong links to other desert peoples (Altschul et al 2005, 2007). Their territory encompassed a vast area stretching from Topanga Canyon in the northwest, to the base of Mount Wilson in the north, to San Bernardino in the east, Aliso Creek in the southeast and the Southern Channel Islands, in all an area of more than 2,500 square miles (McCawley 1996). At European contact, the tribe consisted of more than 5,000 people living in various settlements throughout the area. Some of the villages could be quite large, housing up to 150 people.

As summarized by Bean and Shipek (1978), plant foods were, by far, the greatest part of the traditional diet at contact. Acorns were the most important single food source; two species were used locally. Villages were located near water sources necessary for the leaching of acorns, which was a daily occurrence. Grass seeds were the next most abundant plant food used. Other important seeds were manzanita, sunflower, sage, chia, lemonade berry, wild rose, holly-leaf cherry, prickly pear, lamb’s-quarter, and pine nuts. Seeds were parched, ground, and cooked as mush in various combinations according to taste and availability, much in the manner as weewish. Greens such as thistle, lamb’s-quarters, miner’s lettuce, white sage, and clover were eaten raw or cooked or sometimes dried for storage. Cactus pods and fruits were used.

Thimbleberries, elderberries, and wild grapes were eaten raw or dried for later cooking. Cooked yucca buds, blossoms, and pods provided a sizable addition to the community’s food resources. Bulbs, roots, and tubers were dug in the spring and summer and usually eaten fresh. Mushrooms and tree fungus provided a significant food supplement and were prized as delicacies. Various teas were made from flowers, fruits, stems, and roots for medicinal cures as well as beverages.

The principal game animals were deer, rabbit, jackrabbit, woodrat, mice, ground squirrels, antelope, quail, dove, ducks, and other birds. Most predators were avoided as food, as were tree squirrels and most reptiles. Trout and other fish were caught in the streams, while salmon were available when they ran in the larger creeks. Marine foods were extensively utilized. Sea mammals, fish, and crustaceans were hunted and gathered from both the shoreline and the open ocean, using reed and dugout canoes. Shellfish were the most common resource, including abalone, turban, mussels, clams, scallops, bubble shells, and others.

## **HISTORIC SETTING**

The project area was part of lands under the control of Mission San Juan Capistrano founded in 1776. It was most likely used for grazing animals. After 1833, the missions lost ownership of their lands and they were redistributed by the government. The project area lies partially in two of the large Mexican land grants. The first is Rancho San Joaquin, a land grant issued to Don Jose Sepulveda in 1837. The ranch was developed for ranching cattle and sheep. The land grant issued by the Mexican government incorporated approximately 50,000 acres of the former San Juan Capistrano mission lands. In 1864 Jose Sepulveda sold the rancho to Flint, Bixby & Co. (Liebeck 1988).

The second is Rancho Santiago de Santa Ana, the oldest Mexican land grant in the region, issued to Jose Antonio Yorba, a soldier with the Portola expedition of 1769, and his nephew Juan Peralta. The land grant was for an area encompassing some 62,516 acres, and stretched west from the eastern flanks of the Santa Ana Mountains to the ocean with the north and northwestern boundary formed by the east bank of the Santa Ana River. The Yorbas and Peraltas developed the rancho primarily for cattle grazing and agriculture and eventually the rancho supported at least 33 historic adobes. In 1866 the Yorbas and Peraltas sold their ranch to Flint, Bixby & Co (Liebeck 1988).

In 1876, James Irvine bought out his partners in Flint, Bixby and Co. and became the sole owner of the Irvine Ranch. It continued to be largely a ranching operation for many years. James



Irvine Jr. transitioned the ranch from cattle raising to agriculture. He drilled wells and developed the Irvine Ranch water system including Irvine Lake to support the farming operations. In 1887 the San Bernardino and San Diego Railroad, a subsidiary of Santa Fe, laid rail tracks across the ranch. Buildings to process and pack the ranch agriculture products were built next to the tracks. [Cleland 1952, Liebeck 1988]

## ARCHAEOLOGICAL RESOURCES KNOWN

A search for archaeological records was completed at the South Central Coast Information Center, California State University Fullerton, Orange County, California. The project area and a one-mile radius around the project boundaries were searched.

There are 3 recorded sites within the project area. There are 22 archaeological sites known within a one-mile radius of the project area; mostly to the east and south (Table 3). [Note: The Information Centers have moved from trinomials (CA-ORA-51) to primary numbers (P-30-51) for sites. Isolates are separated from sites by the new numbering system (for example, all begin P-30-100xxx). Buildings are also separated by the new numbering.]

Some 70 archaeological studies (Table 4) are on file for projects within the project boundaries and a one-mile radius. Assessments account for 23 reports, excavations for 9, monitoring reports for 10 and wireless projects number 28. Only 29 IBC residential projects have assessment reports on file and only 7 have monitoring reports (Table 5).

**Table 3. Recorded archaeological and historic sites within one-mile radius of the project**

| Reference<br>P-30- | Site Type                                      | Proximity                   | Date |
|--------------------|--|-----------------------------|------|
| 000051             | Prehistoric habitation with Burials (incl. 77) | Vicinity project boundaries | 1949 |
| 000115             | Prehistoric habitation                         | Vicinity project boundaries | 1963 |
| 000116             | Prehistoric habitation                         | Vicinity project boundaries | 1963 |
| 000117             | Prehistoric habitation                         | Mile radius                 | 1963 |
| 000118             | Prehistoric habitation                         | Mile radius                 | 1963 |
| 000119             | Prehistoric habitation                         | Mile radius                 | 1963 |

| Reference<br>P-30- | Site Type  | Proximity                   | Date |
|--------------------|--|-----------------------------|------|
| 000121             | Prehistoric Habitation with Burials (incl. 284, 287) | Within project boundaries   | 1966 |
| 000195             | Prehistoric Habitation with Burials                  | Within project boundaries   | 1967 |
| 000196             | Prehistoric Habitation with Burials                  | Within project boundaries   | 1967 |
| 000197             | Prehistoric habitation                               | Vicinity project boundaries | 1967 |
| 000373             | Prehistoric Habitation with Burials                  | Mile radius                 | 1972 |
| 000348             | Prehistoric habitation (incl. 112)                   | Vicinity project boundaries | 1972 |
| 000351             | Prehistoric habitation                               | Vicinity project boundaries | 1972 |
| 000508             | Prehistoric habitation                               | Mile radius                 | 1975 |
| 000552             | Prehistoric habitation                               | Mile radius                 | 1975 |
| 000575             | Prehistoric habitation                               | Mile radius                 | 1975 |
| 001488             | Historic trash scatter; some prehistoric frags       | Vicinity project boundaries | 1997 |
| 100161             | Historic isolate, flow blue ceramic frag.            | Vicinity project boundaries | 1997 |
| 100162             | Prehistoric isolate, mano                            | Vicinity project boundaries | 1997 |
| 100163             | Historic isolate, flow blue ceramic frag.            | Vicinity project boundaries | 1997 |
| 100164             | Historic isolate, flow blue ceramic frag.            | Vicinity project boundaries | 1997 |
| 100165             | Two isolates, unid bone and white ceramic            | Vicinity project boundaries | 1997 |
| 100166             | Historic bone and tooth frags of horse               | Vicinity project boundaries | 1997 |
| 100167             | Prehistoric isolate, mano, broken                    | Vicinity project boundaries | 1997 |
| 176837             | Army Reserves Center and Mechanic Shop               | Vicinity project boundaries | 2006 |

**Table 4. Previous studies within a one-mile radius of the project**

(Type: A=assessment, E=excavation, M=monitoring, W=wireless)

| Author                                | Type | Ref    | Title   | Date |
|---------------------------------------|------|--------|---|------|
| Mabry, Theo N.                        | A    | OR0441 | Archaeological Records Search and Reconnaissance Survey: Main Street / Jamboree Road, Irvine, California            | 1979 |
| Stickel, Gary E., and Jerry B. Howard | A    | OR0574 | Final Report of A Cultural Resource Survey of the University of California, Irvine                                  | 1976 |
| Padon, Beth                           | A    | OR0726 | Archaeological Field Review: Village 19a Project, City of Irvine, California  | 1984 |
| Brock, James P.                       | A    | OR0774 | Archaeological, Paleontological, and Historical Resources Assessment Report for the UC Irvine North Campus Property | 1985 |
| Padon, Beth                           | A    | OR0847 | Archaeological Resource Inventory: City of Irvine and Its Sphere of Influence                                       | 1985 |
| Padon, Beth                           | A    | OR0856 | Archaeological and Paleontological Field Review: Irvine Business Complex, City of Irvine                            | N/A  |
| Bissell, Ronald M.                    | A    | OR0863 | Cultural Resources Reconnaissance of Jamboree Center, Phase 2, Irvine, Orange County, California                    | 1987 |
| Jertberg, Patricia R.                 | A    | OR0969 | Cultural Resource Assessment: Jamboree Road Widening  | 1989 |
| Leonard, Nelson N. III                | A    | OR1016 | Environmental Impact Evaluation: Route Alternates Between the Michelson Treatment Plant and Plants on the           | 1975 |

| Author   | Type | Ref    | Title  | Date |
|--|------|--------|--|------|
|  |      |        | Santa Ana River, Orange County, California   |      |
| Cooley, Theodore G.  | A    | OR1099 | Archaeological Resources Assessment Conducted for Proposed Irvine Ranch District Pipeline Right of Ways  | 1979 |
| Marmor, Jason D.   | A    | OR1120 | Historic Architectural Survey Report for a Segment of McArthur Boulevard and Pacific Coast Highway to University Drive, Newport Beach/Irvine, Orange County, California  | 1991 |
| Rosenthal, Jane  | A    | OR1170 | Addendum to Cultural Resources Assessment, Jamboree Road Widening, Irvine, California  | 1991 |
| Conkling, Steve  | A    | OR1396 | Cultural Resources Assessment: Warner Avenue Bridge Over Peters Canyon Channel, Tustin, Orange County, California  | 1994 |
| Whitley-Desautels, Nancy A. & David A. Kice                  | A    | OR1413 | Cultural Resources Assessment of the Irvine Ranch Water District Alternate Aqueous Waste Disposal Facility Sites, Orange County, California  | 1993 |
| McKenna, Jeanette A.   | A    | OR1815 | Historic Property Survey Report: Negative Findings at Alton Avenue/State Route 55 Improvements, Cities of Santa Ana and Irvine, Orange County, California  | 1995 |
| Getchell, Barbie Stevenson and John E. Atwood                | A    | OR1883 | Cultural Resources Survey of a 46-Acre Portion of the San Joaquin Freshwater Marsh Reserve, Irvine, Orange County, California  | 1998 |
| Wlodarski, Robert J.   | A    | OR2013 | Negative Archaeological Survey Report on the Construction of a Transitway in the Median of Interstate 405  | 1990 |
| Atchley, Sara M.   | A    | OR2200 | Cultural Resources Investigation for the Nextlink Fiber Optic Project, Los Angeles and Orange Counties, California   | 2000 |
| Demcak, Carol R.   | A    | OR2256 | Cultural Resource Assessments for Orange County Sanitation Districts   | 1999 |
| Cottrell, Marie G.   | A    | OR2349 | Archaeological Survey of Irvine Ranch Water District Pipeline Route EA No. 176009, Warner Avenue Water Main  | 1977 |
| Webb, Lois M. and Gene Huey                                  | A    | OR2533 | 07-ORA-405 PM 7.4 Overcrossing, Historic Property Survey, 07210-249011   | 1977 |
| Schneeberger, Sandra L., Mark Roeder, & Beth Padon           | A    | OR3353 | Paleontological Resource Assessment Report of a ~3.5 Acre Site, Located at 18880 Douglas Drive, 92612 for the Carlyle Project, A Part of the Irvine Business Center, Development APN #445-013-02   | 2006 |
| Schneeberger, Sandra L., Christopher Drover, & Corry Schulga | A    | OR3354 | Phase I Archaeological Resource Survey of a ~3.5 Acre Site, Located at 18880 Douglas Drive, City of Irvine, County of Orange, California, 92612 for the Carlyle Project, A Part of the Irvine Business Center Development, APN #445-013-02 | 2006 |
| Ellis, Robert R.   | E    | OR0353 | Archaeological Test Excavations at Site ORA-121, Orange County, California   | 1973 |
| Desautels, Roger   | E    | OR0362 | Archaeological Report: CA-ORA-195, Orange County, California   | 1967 |
| Clevenger, Joyce   | E    | OR0399 | Archaeological Salvage Program At Locus B and the Peripheral Sector of Locus A, ORA-121, Irvine, California  | 1979 |
| Clevenger, Joyce   | E    | OR1124 | Archaeological Investigations at CA-ORA-287: A Multicomponent Site on Newport Bay  | 1986 |

| <b>Author</b>   | <b>Type</b> | <b>Ref</b> | <b>Title</b>   | <b>Date</b> |
|---|-------------|------------|--|-------------|
| Cottrell, Marie G.                                      | E           | OR1501     | Archaeological Investigations Conducted at CA-ORA-196, Irvine, California  | 1979        |
| Cottrell, Marie G.                                      | E           | OR1503     | Test Level Investigations Conducted at Archaeological Site CA-ORA-197  | 1976        |
| Strudwick, Ivan   | E           | OR2448     | Results of Archaeological Testing at Site CA-ORA-121, Locus C, near Upper Newport Bay, Orange County, CA   | 1999        |
| Crownover, S., B. Padon, & J. Rosenthal                 | E           | OR2480     | Archaeological Investigations at CA-ORA-121, Orange County, California   | 1990        |
| Strudwick, Ivan   | E           | OR3242     | Results of Cultural Resource Shovel Test Pit Excavation for the Carlson Marsh Regrade Project (IRWD Project #20173; LSA Project #IRW330)                           | 2004        |
| Jertberg, Patricia R.                                   | M           | OR0997     | Archaeological Monitoring for Tentative Parcel No. 88-151, Lots 1, A, 3, 4, and 5  | 1990        |
| Padon, Beth   | M           | OR1814     | Archaeological Monitoring Report for One Park Place, Orange County   | 1994        |
| Padon, Beth   | M           | OR1942     | Archaeological Resource Archival Review and Monitoring for the Lake Shore Towers Project   | 1999        |
| Duke, Curt and D. McLean                                | M           | OR1943     | Results of Archaeological Monitoring for the San Joaquin Marsh Enhancement Plan Project, City of Irvine, Orange County, California                                 | 1998        |
| Padon, Beth   | M           | OR3204     | Archaeological and Paleontological Monitoring at the Campus Center Multi-Family Apartments Expansion, Building C, in the City of Irvine                            | 2006        |
| Commendador-Dudgeon, Amy, Beth Padon, and J. D. Stewart | M           | OR3261     | Archaeological and Paleontological Monitoring for the Plaza Irvine Development, Phase 1, City of Irvine, Orange County, California                                 | 2006        |
| Arrington, Cindy & Nancy Sikes                          | M           | OR3373     | Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California: Volumes I and II                       | 2006        |
| Brown, Joan C.  | M           | OR3499     | Cultural Resources Monitoring for the Irvine Plaza III Project, City of Irvine, Orange County, California  | 2007        |
| Brown, Joan C.  | M           | OR3704     | Cultural Resources Monitoring for the Irvine Plaza IV Project, City of Irvine, Orange County, California   | 2008        |
| Padon, Beth   | M           | OR3726     | Cultural Resources Monitoring for the Clinical Laboratory Replacement Building – UCI Medical Center, University of California, Irvine                              | 2008        |
| Demcak, Carol R.  | W           | OR1526     | Report of Archaeological Survey for L.A. Cellular Site #185, Cowan, Irvine, Orange County  | 1996        |
| Brechbiel, Brant A.                                     | W           | OR1784     | Cultural Resources Search and Literature Review Report for A Pacific Bell Mobile Services Telecommunications Facility: CM 092-26 in the City of Irvine, California | 1998        |
| Brechbiel, Brant A.                                     | W           | OR1785     | Cultural Records Search and Literature Review Report for A Pacific Bell Mobile Services Telecommunications Facility: CM 005-15                                     | 1998        |
| Bonner, Wayne H.  | W           | OR1880     | Cultural Resources Monitoring: L.A. Cellular Site 657.1, Irvine, California  | 1998        |
| Duke, Curt  | W           | OR1973     | Cultural Resource Assessment for Pacific Bell Mobile Services Facility CM 485-01, in the County of Orange, California  | 1999        |
| Duke, Curt  | W           | OR1986     | Cultural Resource Assessment for Pacific Bell Mobile Services Facility CM 485-02, County of Orange,  | 1999        |

| Author             | Type | Ref    | Title  | Date |
|--------------------|------|--------|--|------|
|                    |      |        | California   |      |
| Lapin, Philippe    | W    | OR2173 | Cultural Resource Assessment for Pacific Bell Wireless Facility CM 514-02 County of Orange   | 2000 |
| Lapin, Philippe    | W    | OR2176 | Cultural Resource Assessment for Pacific Bell Wireless Facility CM 416-01, County of Orange  | 2000 |
| Duke, Curt         | W    | OR2235 | Revised Cultural Resource Assessment for AT&T Wireless Services Facility Number C940.1, County of Orange, CA   | 2000 |
| Duke, Curt         | W    | OR2242 | Cultural Resource Assessment for AT&T Wireless Services Facility C956.1, County of Orange, CA  | 2000 |
| Alcock, Gwyn       | W    | OR2247 | Cultural Resources Investigation for the Nextlink Fiber Optic Project, Los Angeles and Orange Counties, California (First Addendum); Nextlink Project Number: 17033-2                              | 2000 |
| Duke, Curt         | W    | OR2444 | Cultural Resource Assessment: AT&T Wireless Services Facility No. 13318A, Orange County, California  | 2002 |
| Duke, Curt         | W    | OR2470 | Cultural Resource Assessment: Cingular Wireless Facility No. SC 036-02, Orange County, California  | 2002 |
| Duke, Curt         | W    | OR2471 | Cultural Resource Assessment: Cingular Wireless Facility No. CM 299-05, Orange County, California  | 2001 |
| Duke, Curt         | W    | OR2478 | Cultural Resource Assessment: Cingular Wireless Facility No. SC 062-01, Orange County, CA  | 2001 |
| Chakurian, Anthony | W    | OR2485 | Site ID Number C940_Jamboree/Alton, Proposed AT&T Wireless Telecommunications Equipment Installation 17052 Jamboree Road, Irvine, California, 29614  | 2001 |
| Bolin, David P.    | W    | OR2492 | Proposed AT&T Wireless Telecommunications Equipment Installation at 2525 Dupont Drive, Irvine, California 92612  | 2001 |
| Billat, Lorna      | W    | OR2493 | Nextel Communications Wireless Telecommunications Service Facility, Orange County  | 2000 |
| Duke, Curt         | W    | OR2583 | Cultural Resource Assessment at AT&T Wireless Services Facility No. 08003c, Orange County, California  | 2002 |
| Duke, Curt         | W    | OR2672 | Revised Cultural Resource Assessment Cingular Wireless Facility No. CM 005-15, Orange  | 2002 |
| Bonner, Wayne H.   | W    | OR3177 | Cultural Resource Records Search and Site Visit Records for Cingular Telecommunications Facility Candidate CM-514-01 (OC-034-01) Reynolds, 1562 Reynolds Avenue, Irvine, Orange County, California | 2005 |
| Bonner, Wayne H.   | W    | OR3178 | Cultural Resources Records Search Results and Site Visit for Cingular Wireless Candidate OC-034-01 (Reynolds), 1562 Reynolds Avenue, Irvine, Orange County, California                             | 2005 |
| Kyle, Carolyn E.   | W    | OR3181 | Cultural Resource Assessment for Cingular Wireless Facility Sc099-03, City of Irvine, Orange County, California  | 2002 |
| Kyle, Carolyn E.   | W    | OR3183 | Cultural Resource Assessment for Cingular Wireless Facility SC082-03, City of Irvine, Orange County, California  | 2002 |
| Bonner, Wayne H.   | W    | OR3198 | Cultural Resources Records Search Results and Site Visit for Cingular Wireless Candidate OC-0053-02 (Performance Equipment), 1902 McGaw Avenue, Irvine, Orange County, California                  | 2005 |
| Bonner, Wayne      | W    | OR3200 | Cultural Resources Records Search and Site Visit Results   | 2006 |

| <b>Author</b>    | <b>Type</b> | <b>Ref</b> | <b>Title</b>  | <b>Date</b> |
|------------------|-------------|------------|---|-------------|
| H.               |             |            | for Cingular Wireless Candidate LSANCAT016 (Construction Circle), 16291 Construction Circle, Irvine, Orange County, California  |             |
| Bonner, Wayne H. | W           | OR3203     | Cultural Resource Management Records Search and Site Visit Results for Cingular Telecommunications Facility Candidate CM-092-01 (OC-005-01) Schiffman Enterprises, 17462 Von Karman Avenue, Irvine, Orange County, California | 2005        |
| Bonner, Wayne H. | W           | OR3476     | Cultural Resource Records Search and Site Visit Results for Royal Street Communications, LLC, Candidate LA2512A (Murphy & Corporate Park), 2802 Barranca Park Way, Irvine, Orange County, California                          | 2007        |

**Table 5. Project Report Presence List**

| <b>IBC Residential Projects</b> | <b>Assessment Reports on File</b> | <b>Monitoring Reports on File</b> |
|---------------------------------|-----------------------------------|-----------------------------------|
| 1                               | 1880                              | in prep                           |
| 2                               |                                   |                                   |
| 3                               |                                   |                                   |
| 4                               |                                   |                                   |
| 5                               | 969, 3373                         |                                   |
| 6                               |                                   |                                   |
| 7                               | 2496, 2448                        |                                   |
| 8                               | 2630                              | 3261                              |
| 9                               | 2630, 2495, 2496, 2448            |                                   |
| 10                              | 1099                              |                                   |
| 12                              | 1099                              |                                   |
| 13                              | 246, 1099                         |                                   |
| 14                              | 2630, 2448                        | 3204                              |
| 15                              | 2630, 3499                        | 3499, 3704                        |
| 16                              | 246, 3353, 3354                   |                                   |
| 17                              | 3353, 3354                        | in prep                           |
| 18                              | 1099                              |                                   |
| 22                              | 285                               |                                   |
| 23                              |                                   |                                   |
| 24                              | 246                               |                                   |
| 25                              | 1099                              |                                   |
| 26                              | 246                               |                                   |
| 27                              | 1099                              |                                   |
| 28                              |                                   |                                   |
| 29                              | 1099                              |                                   |
| 30                              | 246, 3353, 3354                   |                                   |
| 31                              | 1785, 1814, 2448                  | 1814                              |
| 32                              | 2448                              |                                   |
| 33                              | 1413                              | 997                               |

| <b>IBC Residential Projects</b> | <b>Assessment Reports on File</b> | <b>Monitoring Reports on File</b> |
|---------------------------------|-----------------------------------|-----------------------------------|
| 34                              | 969                               |                                   |
| 35                              | 3373                              |                                   |
| 37                              | 246                               |                                   |
| 38                              | 246                               |                                   |
| 40                              | submitted; waiting filing         |                                   |
| 42                              | 1099, 1170                        |                                   |

## **NATIVE AMERICAN CONSULTATION**

A sacred lands record search was requested from the Native American Heritage Commission on April 30, 2008. On May 1, the Commission replied that there were no known sacred lands within the project boundaries (Appendix C). The Commission recommended further consultation with twelve contacts including tribes and individuals. Letters requesting information on any heritage sites were sent to all contacts on May 5, 2008. Sam Dunlap, of the Gabrielino Tongva Nation, responded that the general area was known to be sensitive for prehistoric resources. No other contacts responded.

## **PROJECT ARCHAEOLOGICAL SITES**

Only IBC portions R and W have recorded archaeological sites. These are CA-ORA-195 and 196 in portion R and CA-ORA-121 in portion W. Two additional sites (CA-ORA-284 & 287) were later recorded but represent remnants of site 121 and are therefore considered as portions of that site. Portions of 196 under the parking lot on IBC 22 may be intact. The other two sites appear to be substantially destroyed.

### **Site 195**

Site 195 was mostly destroyed by construction of the Jamboree eastern on-ramp of the 405 freeway in 1967. Salvage excavations were conducted for Caltrans (OR-362). Later additional excavations into the remaining portion of the site were conducted in 1974 (OR-1503). The site was on a knoll rising above the wetlands to the south and east. It appears to have been occupied over a considerable period of time as artifacts were found in association with the clay mentioned



in the paleontology section of this report. However, radiocarbon dates indicated that most of the site was deposited between 5 to 1 thousand years before present. The site contained sixteen burials, eleven cooking features, numerous ground and chipped stone tools, ornaments and ceremonial objects and a large variety of food refuse. Food items were primarily clams and scallops from mudflats plus small sharks and some fish. The younger levels of the site had less shark and fish and more shellfish. Most land animal bones were recovered were from rabbits.

Site 195 was associated with a historic ranch (OR-362). Twentieth century debris including domestic animal bone was recovered in superficial levels of the site salvage excavations. None of the historic ranch buildings or features were recorded before demolition by Caltrans.

### **Site 196**

The portion of Site 196 within the project area was destroyed in the early 1970s by development of Michelson Drive and the Fluor Building. Testing and data recovery excavations were conducted in the remaining portion in 1976 and 1979 (OR-1503, 1501). This site was also situated on a knoll. The results demonstrate similarity to 195 including the same types of features including three burials, contemporaneous time periods represented and similar artifacts. The portion of the site with burials was preserved in place and exempted from future development activities.

Site 196 had 19th Century debris, was thought to be the location of a Mission San Juan Capistrano outpost dating to the 1820s and subsequently home to Jose Sepulveda (OR-1503). Surface collection and excavations failed to reveal any remnant of buildings but did recover typical trash of the period including brownware pottery (Chace 1969).

### **Site 121**

Site 121 originally occupied most of IBC portion W. This discussion includes P-30-284 and 287 as components of 121 based on their originally mapped locations. The site was been destroyed by development activities subsequent to extensive archaeological testing and data recovery excavations (OR-353, 399, 1124, 2448, 2480). The area continues to yield bits of shell in disturbed matrix but these are not scientifically significant.

This site, like 195, was on a knoll and had portions extending to the Pleistocene clay layer. The major occupations occurred 4-1 years before present; also similar to 195. Late prehistoric and historic contact layers are also present. The site contained some burials, cooking features, numerous ground and chipped stone tools, ornaments and ceremonial objects and a large variety of food refuse. Lower levels of the site contain abundant oyster, while higher levels contain more clams and scallops from mudflats. Higher levels also contained abundant small projectile points indicating an increase in hunting, particularly of birds and rabbits.

## **DEVELOPMENT IN PROJECT AREA**

Historic uses of the project lands are known to have been ranching and agriculture. Agricultural fields and three ranch houses or related outbuilding, along Barranca and Redhill, are visible in the 1952 aerial of the project (Figure 9). The 1965 aerials were viewed at the Orange County Archives and the only additional development was a commercial building at the corner of MacArthur and Campus. By 1972 the 405 freeway was constructed and significant commercial development had occurred (Figure 10). By 1980 only a couple of fields were left and most of the IBC was developed (Figure 11). By 2004 the IBC was beginning to undergo redevelopment as old structures were removed and new ones built (Figure 12).



**Figure 9. 1952 aerial of project**



**Figure 10. 1972 aerial of project**





**Figure 11. 1980 aerial of project**



**Figure 12. 2004 aerial of project**

## CONCLUSIONS

There are 3 recorded sites within the project area, all in the southern portion of the project in portions R and W. The sites are P-30-195 and 196 in portion R and P-30-121 in portion W. Portions of 196 under the parking lot on IBC 22 may be intact. No historic structures are extant but scattered ranching debris can be expected throughout. Generally, this debris does not meet significance criteria under CEQA.

Only 7 IBC residential project archaeology monitoring reports could be located. No survey or monitoring reports for IBC portion R (IBC 2, 22, 42) are on file. There is a procedural failure to document that sensitive areas are being adequately mitigated, reports written and submitted and that collections are sent to museums for curation.

## **POTENTIAL RESOURCES**

Paleontological, archaeological and historical resources are considered to be significant if they possess integrity and may contribute information important in prehistory or history. Based on the prior research and survey results, the potential to impact resources is discussed below.

### **PALEONTOLOGICAL RESOURCES**

Scientifically important fossils are being recovered from the IBC and many other areas of Irvine at depths of six feet or more below the surface. The known fossils from the project area are all from the Pleistocene Epoch and represent the last Ice Age (40-10 thousand years ago). Deeper sediments are also known to produce scientifically significant fossils.

Only 8 IBC residential project paleontology monitoring reports could be located. No survey or monitoring reports for IBC portion R (IBC 2, 22, 42) are on file. Major collections of fossils have no reports and the fossils are not in museums. There is a procedural failure to document that adequate mitigation is being performed, reports are being written and submitted and that fossils are sent to museums for curation.

### **ARCHAEOLOGICAL RESOURCES**

The vast majority of the project area has no known archaeological resources. There are 3 recorded sites within the project area, all in the southern portion of the project in portions R and W. The sites are P-30-195 and 196 in portion R and P-30-121 in portion W. Portions of 196 under the parking lot on IBC 22 may be intact.



Only 29 IBC residential projects have assessment reports on file. Only 7 IBC residential project archaeology monitoring reports could be located. No survey or monitoring reports for IBC portion R (IBC 2, 22, 42) are on file. There is a procedural failure to document that sensitive areas are being adequately mitigated, reports written and submitted and that collections are sent to museums for curation.

## **HISTORICAL RESOURCES**

No historic structures are extant but scattered ranching debris can be expected throughout. Generally, this debris does not meet significance criteria under CEQA.

## **RECOMMENDATIONS**

The City of Irvine appears to have diligently required mitigation of construction activities within the IBC. However, post-mitigation documentation and curation is not being effectively tracked to insure compliance with City requirements. In particular, reports are not being written and filed as required nor are fossils and artifacts being transferred to museums as required.

This failure of environmental policy has far reaching implications that violate both the letter and the intent of CEQA and City regulations. Fossils, in particular, are not available for scientific study or education unless they are in a museum with access for researchers. In addition, due to rules imposed by the International Commission on Zoological Nomenclature, no fossils can be published in scientific journals unless they have museum specimen numbers and are located in a museum with access for researchers. Reports are important to convey the project results, catalog, photographs and other necessary information.

The Cultural Resource Element of the City of Irvine General Plan needs to be updated and contain specific language to insure that policies are actually implemented. The sensitivity maps (Figures E-1 and E-2) should not be utilized for planning purposes unless updated at minimum five year intervals. The revised language should specify that museum specimen numbers must be included in reports, along with a letter from the museum stating that the fossils are in their

possession, and require that reports be submitted to the City and repository before any developer can receive a final occupancy permit. The City should consider selecting a single repository and requiring that all fossils from the City be submitted to that repository. Through that relationship, the City could obtain an annual update on fossils submitted to the repository and a revised sensitivity map.

## **SPECIFIC IMPACTS AND MITIGATION**

**Impact:** Could significant archaeological resources be impacted by the project? Yes, but only in portions R and W.

**Mitigation:** All projects in portions R and W should require assessment including survey, monitoring, reporting and curation of recovered materials meeting significance criteria. Each project should be refused a final occupancy permit until all mitigation is demonstrated to have been performed including curation.

**Impact:** Could significant paleontological resources be impacted by the project. Yes, throughout the project area at variable depths.

**Mitigation:** All projects in the IBC should require assessment including review of geotechnical boring logs to determine depth of marker clay bed, monitoring, reporting and curation of recovered materials meeting significance criteria. Each project should be refused a final occupancy permit until all mitigation is demonstrated to have been performed including curation.

**Impact:** Could human remains be impacted by the project. Yes, but only in portions R and W.

**Mitigation:** All projects in portions R and W should require Native American monitoring and consultation if prehistoric burials are encountered. A joint decision on treatment should be made and approved by the State Office of Historic Preservation before implementation. Each project should be refused a final occupancy permit until all mitigation is demonstrated to have been performed.

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## **APPENDIX A: QUALIFICATIONS**

## SHERRI GUST

Cogstone Paleontology Archaeology History

Registered Professional Archaeologist & Qualified Paleontologist

### EDUCATION

- 1994 M. S., Anatomy and Cell Biology (Evolutionary Morphology), University of Southern California, Los Angeles
- 1979 B. S., Anthropology (Physical), University of California, Davis

### SUMMARY QUALIFICATIONS

Gust has more than 28 years of experience in California, acknowledged credentials for meeting national standards and is certified/qualified in all southern California cities and counties that maintain lists.

### SELECTED REPORTS AND PROJECTS

2008 Gust, S., K. Scott and A. Glover. **Archaeological and Paleontological Assessment and Mitigation Plan for the Scattergood Olympic Line, Los Angeles, California.** Performed paleontological and archaeological record searches, Native American consultation, research, survey and prepared assessment report for LADWP under subcontract to the IFC Jones & Stokes.

2008 Gust, S., and K. Scott. **Paleontological and Archaeological Assessment and Mitigation Plan for the Cold Canyon Landfill Expansion Project, San Luis Obispo, California.** Performed paleontological and archaeological record searches, Native American consultation, research, survey and prepared assessment, impact analysis and EIR section for County of San Luis Obispo under subcontract to the Morro Group.

2008 Gust, S., V. Harper and K. Scott. **Cultural Resources Assessment of Nine School Sites for the Corona-Norco Unified School District.** Performed archaeological record searches, Native American consultation, research, survey and prepared assessment reports under contract to the Corona-Norco Unified School District.

2007 Gust, S., S. McCormick and K. Scott. **Paleontological and Archaeological Assessment Report for the Metrolink Expansion Services Project at Fullerton Station, City of Fullerton, California.** Performed record searches, Native American consultation and survey and prepared evaluation report for OCTA under contract to Parsons Brinckerhoff Orange.

2007 Gust, S. **Paleontological and Archaeological Literature Review for the Sea Lab Desalination Plant, City of Redondo Beach, California.** Performed archaeological and paleontological record search and literature review, evaluation of resources, and prepared final assessment report with recommendations for mitigation for the West Basin Municipal Water District under contract to RBF Consulting.



**KIM SCOTT**

Cogstone Paleontology Archaeology History  
Field & Lab Director for Paleontology

**EDUCATION**

Exp. 2009      M.S., Biology, with paleontology emphasis (in progress), CSU San Bernardino.  
 2000            B.S., Geology with paleontology emphasis, UCLA.

**SUMMARY QUALIFICATIONS**

Scott has more than 12 years of experience in California paleontology. She is a qualified geologist and field paleontologist with extensive survey, monitoring and fossil salvage experience. In addition she has special skills in fossil preparation (cleaning and stabilization) and preparation of stratigraphic sections and other documentation for fossil localities.

**SELECTED PROJECTS**

2008    Gust, S. and K. Scott. **Paleontological Assessment for the Exposition Transit Corridor Westside Extension (Expo LRT Phase II), Cities of Los Angeles and Santa Monica, California.**

Cogstone performed paleontological record searches and survey and prepared an assessment report including evaluation of alternatives plus a mitigation plan for the Expo Authority under subcontract to EDAW.

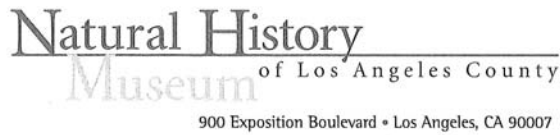
2007    Scott, K. and S. Gust. **Paleontological Resources Management Plan for the Tehachapi Renewable Transmission Project (Antelope Transmission Project) Segment 1, Los Angeles County, California with updated paleontological assessment.** Cogstone performed paleontological record searches, background research, prepared an assessment of the potential resources including a sensitivity map, arranged a repository, and prepared a comprehensive management plan for Southern California Edison under subcontract to Pacific Legacy.

2007    Scott, K. and S. Gust. **Paleontological Mitigation Report for the Walker Ridge Safety/Rehabilitation Project, Lake County, California.** Cogstone provided paleontological monitors, fossil recovery, fossil preparation, a final interpretive report and transported fossils to an accredited repository for curation for Caltrans District 3 (acting for District 1) under subcontract to Pacific Legacy.

2007    Scott, K. and S. Gust. **Paleontological Mitigation Report for the Highway 138 Expansion West Project, San Bernardino County, California.** Cogstone developed and implemented a sampling plan in lieu of monitoring, recovered fossils, prepared and identified fossils, prepared the final report including interpretation and arranged curation of significant fossils recovered for Caltrans District 8 under subcontract partially to Applied Earthworks and partially to ECORP.

2006    Scott, K. and S. Gust. **Paleontological Resources of the Interstate 80 Median and Auxillary Lanes Project, Sacramento, California: an abbreviated combination Paleontological Identification Report, Paleontological Evaluation Report and Paleontological Mitigation Plan.** Cogstone performed paleontological record searches, research, survey and prepared a combined report and mitigation plan for Caltrans District 3 under subcontract to URS Oakland.

## **APPENDIX B: PALEONTOLOGY RECORD SEARCH**



Vertebrate Paleontology Section  
Telephone: (213) 763-3325  
FAX: (213) 746-7431  
e-mail: smcleod@nhm.org

2 May 2008

Cogstone Resource Management, Inc.  
1801 East Parkcourt Place, Bldg. B, Suite 102  
Santa Ana, CA 92701

Attn: Sherri Gust

re: Vertebrate Paleontology Records Check for paleontological resources for the proposed Irvine Business Center, Cogstone Project # 1382, in the City of Irvine, Orange County, project area

Dear Sherri:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed Irvine Business Center, Cogstone Project # 1382, in the City of Irvine, Orange County, project area as outlined on the section of the Tustin USGS topographic quadrangle map that Steven McCormick sent to me via e-mail on 30 April 2008. We do not have any vertebrate fossil localities that lie directly within the proposed project boundaries, but we do have localities nearby in the same sediments that may occur at depth in the proposed project area.

In the southeastern portion of the proposed project area, just south of the San Diego Freeway (I-405) and west of the Peters Channel, there are exposures of older Quaternary terrace deposits. Most of the rest of the southwestern portion of the proposed project area, south of the San Diego Freeway, as well as the southwestern extension, east of McArthur Boulevard and southeast of Jamboree Boulevard, is mapped as having exposures of marine older Quaternary terrace deposits. The remainder of the proposed project area has surficial deposits of younger Quaternary Alluvium.

The younger Quaternary Alluvium deposits typically do not contain significant vertebrate fossil remains, at least in the uppermost layers, and we have no vertebrate fossil localities anywhere nearby from such deposits. At unknown depth beneath the younger Quaternary Alluvium, however, older Quaternary sediments that contain significant fossil vertebrate materials may well be encountered. Our closest fossil vertebrate localities in the nearby areas mapped as have exposures of marine older Quaternary terrace deposits are west to southwest of the proposed project area, south of the San Diego Freeway (I-405) between the Newport Freeway (Highway 55) and the Santa Ana River. These localities include LACM 1339, due west of the southern portion of the proposed

"...to inspire wonder, discovery and responsibility  
for our natural and cultural worlds."

project area along Adams Avenue near the top of the mesa bluffs east of the Santa Ana River, that produced fossil specimens of mammoth, *Mammuthus*, and camel, Camelidae, in sand approximately 15 feet below the top of the mesa that is overlain by shell bearing silts and sands, and LACM 4219, southwest of the proposed project area in a roadcut for the Newport Freeway near Santa Isabel Avenue, that produced fossil specimens of turtle, Testudinata, and camel, Camelidae, in coarse poorly sorted friable sands about 30 feet below the grade of Newport Boulevard. Our next closest vertebrate fossil locality in these deposits is LACM 3267, further southwest of the proposed project area near the intersection of Anaheim Avenue and 19<sup>th</sup> Street, that produced remains of an undetermined fossil elephant, Proboscidea, but the depth and lithology were not recorded. We further have a large number of vertebrate fossil localities from the marine and terrestrial Late Pleistocene terraces deposits on the east side of Upper Newport Bay south of San Diego Creek immediately south and southwest of the proposed project area, including locality LACM 1066. W.E. Miller (1971. Pleistocene vertebrates of the Los Angeles basin and vicinity (exclusive of Rancho La Brea). LACM Science Bulletin, 10:1-124) published on the extensive fossil fauna from locality LACM 1066.

Surface grading or shallow excavations in the younger Quaternary Alluvium exposed in the northern portions of the proposed project area are unlikely to produce significant fossil vertebrate remains. Deeper excavations in those areas that extend down into older Quaternary deposits, however, as well as any excavations in the exposures of older Quaternary terrace deposits in the southern portions of the proposed project area, may well encounter significant vertebrate fossils. Thus any substantial excavations in the proposed project area should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,



Samuel A. McLeod, Ph.D.  
Vertebrate Paleontology

enclosure: draft invoice

## **APPENDIX C: NATIVE AMERICAN HERITAGE COMMISSION**

STATE OF CALIFORNIA

Arnold Schwarzenegger, Governor

**NATIVE AMERICAN HERITAGE COMMISSION**

915 CAPITOL MALL, ROOM 364  
 SACRAMENTO, CA 95814  
 (916) 653-6251  
 Fax (916) 657-5390  
 Web Site [www.nahc.ca.gov](http://www.nahc.ca.gov)  
 e-mail: [ds\\_nahc@pacbell.net](mailto:ds_nahc@pacbell.net)



May 1, 2008

Steven McCormick  
 Archaeologist  
 Archaeology Field Supervisor  
 1801 Parkcourt Pl., B102  
 Santa Ana, CA 92701

Fax: 714-245-0054  
 Number of Pages: 3

Re: Proposed: Irvine Business Center Project (No. 1382).

Dear Mr. McCormick:

The Native American Heritage Commission was able to perform a record search of its Sacred Lands File (SLF) for the affected project area. The SLF failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the Sacred Lands File does not guarantee the absence of cultural resources in any 'area of potential effect (APE).'

Early consultation with Native American tribes in your area is the best way to avoid unanticipated discoveries once a project is underway. Enclosed are the nearest tribes that may have knowledge of cultural resources in the project area. A List of Native American contacts are attached to assist you. The Commission makes no recommendation of a single individual or group over another. It is advisable to contact the person listed; if they cannot supply you with specific information about the impact on cultural resources, they may be able to refer you to another tribe or person knowledgeable of the cultural resources in or near the affected project area (APE).

Lack of surface evidence of archeological resources does not preclude the existence of archeological resources. Lead agencies should consider avoidance, as defined in Section 15370 of the California Environmental Quality Act (CEQA) when significant cultural resources could be affected by a project. Also, Public Resources Code Section 5097.98 and Health & Safety Code Section 7050.5 provide for provisions for accidentally discovered archeological resources during construction and mandate the processes to be followed in the event of an accidental discovery of any human remains in a project location other than a 'dedicated cemetery. Discussion of these should be included in your environmental documents, as appropriate.

If you have any questions about this response to your request, please do not hesitate to contact me at (916) 653-6251.

Sincerely,

A handwritten signature in black ink, appearing to read "Dave Singleton".

Dave Singleton  
 Program Analyst

Attachment: Native American Contact List

**Native American Contacts  
Orange County  
May 1, 2008**

**Cahuilla Band of Indians**  
Anthony Madrigal, Jr., Chairperson  
P.O. Box 391760      Cahuilla  
Anza, CA 92539  
tribalcouncil@cahuilla.net  
(951) 763-2631  
  
(951) 763-2632 Fax

**Ti'At Society**  
Cindi Alvitre  
6515 E. Seaside Walk, #C      Gabrielino  
Long Beach, CA 90803  
calvitre@yahoo.com  
(714) 504-2468 Cell

**Juaneno Band of Mission Indians Acjachemen Nation**  
David Belardes, Chairperson  
31742 Via Belardes      Juaneno  
San Juan Capistrano, CA 92675  
DavidBelardes@hotmail.com  
(949) 493-0959  
(949) 493-1601 Fax

**Gabrielino/Tongva Council / Gabrielino Tongva Nation**  
Sam Dunlap, Tribal Secretary  
761 Terminal Street; Bldg 1, 2nd floor      Gabrielino Tongva  
Los Angeles, CA 90021  
office@tongvatribes.net  
(213) 489-5001 - Office  
(909) 262-9351 - cell  
(213) 489-5002 Fax

**Juaneno Band of Mission Indians Acjachemen Nation**  
Anthony Rivera, Chairman  
31411-A La Matanza Street      Juaneno  
San Juan Capistrano, CA 92675-2674  
arivera@juaneno.com  
949-488-3484  
949-488-3294 Fax

**Gabrielino Tongva Indians of California Tribal Council**  
Robert Dorame, Tribal Chair/Cultural Resources  
5450 Slauson, Ave, Suite 151 PMB      Gabrielino Tongva  
Culver City, CA 90230  
gtongva@verizon.net  
562-761-6417 - voice  
562-925-7989 - fax

**Juaneno Band of Mission Indians Acjachemen Nation**  
Joyce Perry, Tribal Manager & Cultural Resources  
31742 Via Belardes      Juaneno  
San Juan Capistrano, CA 92675  
kaamalam@cox.net  
(949) 493-0959  
(949) 293-8522 Cell  
(949) 493-1601 Fax

**Juaneno Band of Mission Indians**  
Alfred Cruz, Cultural Resources Coordinator  
P.O. Box 25628      Juaneno  
Santa Ana, CA 92799  
alfredgcruz@sbcglobal.net  
714-998-0721  
slfredgcruz@sbcglobal.net

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

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

This list is only applicable for contacting local Native American with regard to cultural resources for the proposed, Irvine Business Center Project (No. 1382); located on the former Tustin Marine Corps Air Station (MCAS) Property in Orange County, California for which a Sacred Lands File search and Native American Contacts list were requested.



**Native American Contacts  
Orange County  
May 1, 2008**

Juaneno Band of Mission Indians  
Adolph "Bud" Sepulveda, Chairperson  
P.O. Box 25828                      Juaneno  
Santa Ana                      , CA 92799  
bssepul@yahoo.net  
714-838-3270  
714-914-1812 - CELL  
bsepul@yahoo.net

Sonia Johnston, Tribal Vice Chairperson  
Juaneño Band of Mission Indians  
P.O. Box 25628                      Juaneno  
Santa Ana                      , CA 92799  
(714) 323-8312  
sonia.johnston@sbcglobal.net

Juaneno Band of Mission Indians  
Anita Espinoza  
1740 Concerto Drive                      Juaneno  
Anaheim                      , CA 92807  
(714) 779-8832

Juaneno Band of Mission Indians  
Joe Ocampo, Chairperson  
1108 E. 4th Street                      Juaneno  
Santa Ana                      , CA 92701  
(714) 547-9676  
(714) 623-0709-cell

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

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

This list is only applicable for contacting local Native American with regard to cultural resources for the proposed, Irvine Business Center Project (No. 1382); located on the former Tustin Marine Corps Air Station (MCAS) Property in Orange County, California for which a Sacred Lands File search and Native American Contacts list were requested.