ADDENDUM TO THE FINAL ENVIRONMENTAL IMPACT REPORT

(State Clearinghouse #2007061092)

CAMPUS MASTER PLAN

Housing Expansion Phase I – Parkside North Housing Project

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Acronyms and Abbreviations

Acronym/Abbreviation	Definition
°C	Degrees Celsius
°F	Degrees Fahrenheit
AB	Assembly Bill
ASI	Associated Students, Inc.
BOT	Board of Trustees
CalEEMod	California Emissions Estimator Model
CALGreen	California Green Building Standards
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
CCR	California Code of Regulations
CEC	California Energy Commission
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CH_4	Methane
CHRIS	California Historical Resources Information System
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
CAFÉ	Corporate Average Fuel Economy
CPUC	California Public Utilities Commission
CSU	California State University
CSULB	California State University, Long Beach
EIA	Energy Information Administration
EIR	Environmental Impact Report
EISA	Energy Independence and Security Act
EO	Executive Order
EPA	U.S. Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FR	*Federal Register*
FTE	Full time equivalent
GSF	Gross square feet
GWh	Gigawatt-hours
GWP	Global warming potential
HFCs	Hydrofluorocarbons
HRL	Housing and Residential Life
HVAC	Heating, ventilation, and air conditioning
I	Interstate
IPCC	Intergovernmental Panel on Climate Change
kBtu	Thousand British thermal units
kWh	Kilowatt-hours
LACM	Natural History Museum of Los Angeles County
LEED	Leadership in Energy and Environmental Design
LOS	Level of service
mpg	Miles per gallon

Acronym/Abbreviation	Definition
MMBtu	Million British thermal units
MMT	Million metric tons
MPO	Metropolitan planning organization
MT	Metric tons
N_2O	Nitrous oxide
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NF_3	Nitrogen trifluoride
NHTSA	National Highway Traffic Safety Administration
NOI	Notice of Intent
NO_x	Nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
OPR	Office of Planning and Research
PFCs	Perfluorocarbons
PM_{10}	Particulate matter with a diameter of less than 10 microns
PRC	Public Resources Code
PV	Photovoltaic
RA	Resident assistant
RFS	Renewable Fuel Standard
ROG	Reactive organic gases
RPS	Renewable Portfolio Standard
RTP	Regional Transportation Plan
SAFE	Safer Affordable Fuel-Efficient
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCE	Southern California Edison
SCS	Sustainable Communities Strategy
SF_6	Sulfur hexafluoride
SLCP	Short-lived climate pollutant
SLF	Sacred Lands File
SoCalGas	Southern California Gas Company
SR	State Route
SWPPP	Stormwater Pollution Prevention Plan
VMT	Vehicle miles traveled
ZEV	Zero-emissions vehicle

1 Introduction

This document constitutes Addendum #1 to the Final Environmental Impact Report (EIR) for the California State University, Long Beach (CSULB) Campus Master Plan Update (State Clearinghouse #2007061092), certified by the California State University (CSU) Board of Trustees (BOT) in May 2008. The 2008 Campus Master Plan addresses all aspects of future physical development and land use on the campus to accommodate the enrollment ceiling of 31,000 full-time-equivalent (FTE) students through 2020. This EIR Addendum has been prepared to address minor project changes associated with the Housing Expansion Phase I – Parkside North Housing Project (Project), as well as changed circumstances, and new information since the certification of the Campus Master Plan Update EIR. This section of the EIR Addendum describes the purpose of the Addendum, an overview of the 2008 Campus Master Plan and Campus Master Plan Update EIR, and the description of the Project.

1.1 Purpose of an EIR Addendum

Once an EIR or other California Environmental Quality Act (CEQA) document has been prepared for a project, Sections 15162-15164 of the CEQA Guidelines define the standards for determining the appropriate level of subsequent environmental review and Section 15164 addresses the specific circumstances requiring the preparation of an Addendum to an EIR. If new significant impacts or a substantial increase in the severity of impacts would result, then preparation and circulation of a Subsequent or Supplemental EIR for additional public review is required. However, when it can be determined that neither the proposed changes to the project, changed circumstances, or new information result in the identification of new significant impacts, or the substantial increase in the severity of significant impacts identified in the certified EIR, an Addendum to the EIR may be prepared. Public review of an Addendum is not required under CEQA. This Addendum would be included in or attached to the Campus Master Plan Update EIR and considered during the BOT's consideration of the schematic design approval for the Project.

An Addendum to the certified Campus Master Plan Update EIR has been determined to be the appropriate environmental documentation for the Project. Student housing was contemplated for the Project site in the Campus Master Plan and Campus Master Plan Update EIR. However, this Addendum to the Campus Master Plan Update EIR was prepared pursuant to CEQA Guidelines Section 15164 to address minor project changes, changed circumstances, and new information since the certification of the Program EIR.

1.2 Overview of the Campus Master Plan and EIR

1.2.1 Campus Master Plan

1.2.1.1 Overview

The Campus Master Plan, approved by the BOT in May 2008, provides for comprehensive guidance for physical and programmatic improvements into the future to accommodate 31,000 FTE students by 2020. Up to approximately 1.2 million square feet in new or replacement structures are currently proposed to meet this need. In addition, area plans on campus have been identified for more detailed development. These are the Student

Services Addition, Peterson Hall 1 and 2 Replacement, the Liberal Arts Complex, Student Housing, and the Soccer Field and Sports Buildings. Many of these have been completed since the adoption of the Campus Master Plan. Overall, the Campus Master Plan Update EIR evaluated the construction of 2,000 new bed spaces on campus. Specifically, the Campus Master Plan provides for more than 2,000 new beds in both the Parkside and Hillside Residential Housing complexes, as well as adding new dining rooms, convenience stores, coffee houses, laundry facilities, and seminar, activity, and conference rooms. “Campus Housing Phase 1,” described in the Campus Master Plan, would include almost 1,000 beds, a dining common, a coffee house, offices, and other amenities in the Parkside and Hillside Residential Housing complexes. Phase 2 would include more than 1,000 beds and other support facilities. However, none of these bed spaces have been built on the campus to date.

1.2.1.2 Campus Master Plan Building Proposal for Project Site

The portion of Campus Housing Phase 1 planned on the Project site in the Campus Master Plan consisted of two L-shaped residential buildings containing 522 beds (508 student beds and 14 resident assistant [RA] beds). These included two residence halls around a central yard at the current site of the Housing Administration Office (the Project site). The south residence hall was planned to be four stories while the north residence hall was planned to be three stories to maintain a low profile towards nearby off-campus uses.

1.2.2 Campus Master Plan Update EIR

The Campus Master Plan Update EIR, certified in May 2008, evaluated the effects of the maximum growth that could occur on the campus under the plan at a program level. A Program EIR is the appropriate environmental document for a series of actions that can be characterized as a single project, such as the Campus Master Plan. Further, according to CEQA Guidelines Section 15168(b), the use of the Program EIR provides for advantages in that it can: (1) provide for a more exhaustive consideration of effects and alternatives than would be practical in a CEQA document on an individual action; (2) ensure consideration of cumulative impacts that might be slighted in a case-by-case analysis; (3) avoid duplicative reconsideration of basic policy considerations; (4) allow the lead agency to consider alternative and programmatic mitigation measures early in the planning process; and (5) allow for reduction in paperwork.

Environmental impacts were evaluated in the Campus Master Plan Update EIR to the extent possible and at an appropriate level of detail given the level of project information available in the proposed Campus Master Plan. Additionally, appropriate programmatic mitigation measures were developed that provide for performance standards to reduce the impacts of future projects to a less-than-significant level, where feasible.

The Campus Master Plan Update EIR evaluated Campus Housing Phases 1 and 2, as described above in Section 1.2.1, *Campus Master Plan*.

1.3 Housing Expansion Phase I – Parkside North Housing Project Description

1.3.1 Project Overview

The proposed three- to four-story student housing building is located on a site identified for a student housing building and the building characteristics are similar—but not identical—to the building described in the Campus Master Plan and Campus Master Plan Update EIR. The Project would include demolition of the existing, approximately 3,800-gross-square-foot (GSF) Housing and Residential Life (HRL) Office building on site and construction of a new, approximately 136,000-GSF residential building. Utility infrastructure improvements, as well as new lighting and landscaping, would also be provided. The Project would not include additional parking facilities. All applicable mitigation measures identified in the Campus Master Plan Update EIR and included in the adopted Mitigation Monitoring and Reporting Program are part of the proposed Project and are listed in Appendix A of this Addendum.

1.3.2 Project Location and Setting

The Project site is located in the northwestern corner of the CSULB campus in the City of Long Beach, California. The CSULB campus encompasses 322 acres and is located 3 miles from the Pacific Ocean. The campus is bounded by East Atherton Street to the north, Palo Verde Avenue to the east, East 7th Street to the south, and Bellflower Boulevard to the west (see Figure 1). Primary vehicular access to the campus is from Earl Warren Drive and Merriam Way from East Atherton Street, State University Drive from Palo Verde Avenue, West Campus Drive from East 7th Street, and Beach Drive from Bellflower Boulevard. Interstate 405 (I-405) runs east-to-west north of the campus, with interchanges at several streets that serve the campus. State Route 22 (SR-22) provides direct access to East 7th Street just southeast of the campus. Interstate 605 (I-605) terminates at I-405 and SR-22 east of campus.

Figure 2 shows the Project site. The Project site is bounded by East Atherton Street to the north, the on-campus Associated Students Inc. (ASI) Recycling Center to the east, on-campus residence halls in the Parkside Residential Community to the south, and an on-campus daycare facility—the Isabel Patterson Child Development Center—to the west. Earl Warren Drive traverses the easternmost portion of the site and an unnamed access road traverses the southernmost portion. The southern site boundary also encompasses the sidewalk and some turf/landscaped area in front of the on-campus residence halls to the south of the site. An off-campus residential neighborhood is located to the north of the site across East Atherton Street, and on-campus residence halls and commons are located to the south of the site. The majority of the site consists of a grass-covered open space and an existing building for the HRL Office, built in 1989, is located at the southeast corner of the site. A sand volleyball court is located on the northern portion of the site and raised garden beds associated with a campus garden program occupy the northwest corner. The southwestern corner of the site contains a paved surface parking lot with 27 spaces associated with the daycare center, and 6 loading spaces are located on the southern portion of the site. The site topography is relatively level and the site grade smoothly continues to the concrete sidewalk around the site without steep slopes or steps. The sidewalk around the site is connected to adjacent Parking Lots G7, G8, and G9 and the Parkside Residential Community via crosswalk and/or curb ramps.

The northern and eastern perimeters of the Project site are lined with trees and shrubs. A total of 33 landscape trees and 62 screen shrubs are located throughout the Project site. The trees on site consist of the following:

- 8 Brisbane box (*Lophostemon confertus*)
- 3 Canary Island pine (*Pinus canariensis*)
- 5 carrot wood (*Cupaniopsis anacardioides*)
- 1 evergreen pear (*Pyrus kawakamii*)
- 1 glossy privet (*Ligustrum lucidum*)
- 10 lemon-scented gum (*Corymbia citriodora*)
- 3 pink melaleuca (*Melaleuca nesophila*)
- 2 red ironbark (*Eucalyptus sideroxylon*)

The trees on the northern side are set back from East Atherton Street and were planted mostly along an existing fence line. Turf lawn exists between the fence line and East Atherton Street.

In addition, two landscape trees are located at the northwestern corner of the Parkside Residential Community near a row of existing parking spaces on an existing grass area (southwest of the Project site).

1.3.3 Project Purpose

CSULB has not built a new housing project in over 30 years. With only 2,000 existing beds on campus and a FTE enrollment of 30,500 students (CSU 2019), the campus has a great need to expand its residential offerings to serve student need and aid in academic success. Additionally, there is a First-Year Freshman Live-On Policy that requires first-time freshmen to live in University Housing. In order to accommodate these students, freshman are currently housed in suite-style residences more appropriate to sophomores or upper classmen. With its emphasis on pod-style communities, the proposed new residential building would add high quality living and common space for these first-year students.

1.3.4 Project Components and Design

The Project would consist of demolition of the existing, approximately 3,800-GSF HRL building on the site and construction of a new, approximately 136,000- GSF residential building with 476 student beds, which is less than the 522 beds proposed for the Project site in the Campus Master Plan. The bed spaces would consist of approximately 412 student beds in a mix of a total of 228 double- and single-occupancy bedrooms, 64 student beds in 16 four-bed suites, and a total of four 1- and 2-bedroom apartments for faculty and staff. The building would be three stories on the north side along East Atherton Street, stepping back to four stories on the south side along the unnamed access road. Figure 3 shows the site plan.

Project design would conform to the Campus Master Plan's architectural guidelines by:

- Being centered on the terminus of an existing campus green at Parkside College, with the campus green connecting with the main courtyard and entry to the building;
- Being rectilinear in form with individual concrete floor plates extending out beyond the building walls on the south, east, and west facades to form overhangs which shield the sun and rain at each level of the building;

- Including primary building materials consisting of white concrete columns and horizontal concrete overhangs, vertical brick planes, and durable, long-lasting materials;
- Siting the service areas so that vehicles do not conflict with pedestrian paths; and
- Exceeding the requirements of Title 24.

The housing would be provided as pod-style communities that have components of suite-style living: single- and double-occupancy bedrooms, single-user bathrooms, and shared common spaces—but the organization of these components would be open and shared. Rather than traditional suites with individual living rooms, much of the common spaces in these pod-style communities would be focused on a central location to bring together more activity, social engagement, and academic collaboration. Group study rooms would also be located within the pods.

Students would be connected both horizontally across the floor and vertically with stacked community spaces. The egress stairs would be exterior and visible from the interior community spaces. Students would see and be seen moving between floors and between these public spaces. The elevator cores would be connected to the community spaces and would be public to all residents. Key cards would be used to get into each pod. The roof terrace above the suite-style residence rooms would be a controlled space and accessible by both wings of the building at prescribed times of the day. It would be shaded by bifacial photovoltaic (PV) panels.

The building configuration would include an internal courtyard, which would include an area programmed for active use and an area programmed for quiet use, described further in Section 1.3.5, *Landscaping and Irrigation*, below. The south half of the building would be elevated so that the ground floor would be open to the courtyard and connect directly to the Parkside student residential community to the south. The outdoor spaces within the new housing project would be shared amenities for the rest of Parkside.

As required by the Campus Master Plan, the building would be three stories on the East Atherton Street frontage and would step up to four stories to the south, facing the on-campus residence halls and commons. The north building elevation would be a maximum height of approximately 45 feet (50 feet with equipment screens) and would be set back approximately 35 feet from East Atherton Street. The south building elevation would be a maximum height of 55 feet (60 feet with equipment screens), including the roof terrace. Figure 4 shows the proposed building elevations.

The Project goal is to achieve Zero Net Energy, the Living Building Challenge Petal certification, and Leadership in Energy and Environmental Design (LEED) v4 Platinum certification. At a minimum, the Project would achieve LEED Gold. In addition to this, the building must achieve 10-percent compliance above Title 24 requirements,[1] and each individual system (heating, ventilation, and air conditioning [HVAC]; electrical, envelope) must pass Title 24 requirements independently.

[1] Note that the 2008 Campus Master Plan Update EIR included a mitigation measure requiring all new or renovation projects on campus to exceed Title 24 energy requirements by 15 percent. Since 2008, Title 24 standards have become increasingly stringent; between 2013 and 2016, there was a 28-percent reduction in energy use for residential land uses and, between 2016 and 2019, energy use was reduced further by 7 percent. Therefore, 10 percent above 2019 Title 24 standards would be a larger reduction than 15 percent above 2008 Title 24 standards.

1.3.5 Landscaping and Irrigation

The 33 existing trees on the Project site and the 2 existing trees in the proposed parking area in the northwestern corner of the Parkside Residential Community to the southwest would be removed as part of the Project. A new row of canopy trees, a planted zone, and bioswale would be installed along the East Atherton Street frontage. Along the Earl Warren Drive frontage, eight existing street trees would be retained. The frontage along the existing daycare facility would include a standard sidewalk leading to East Atherton Street, a new row of evergreen canopy trees, and a new planted buffer. The buffer would include evergreen shrubs to act as screening for ground-level residential units in the proposed building. A privacy fence and planted buffer of shrubs and vines would be incorporated to screen the outdoor courtyard. Along the southern frontage, small- to medium-sized flowering trees with understory planting would be installed along the curb.

The Project would include four distinct exterior spaces:

- An active courtyard on the ground floor with a play surface, palm trees, and casual furnishings with both covered and open space;
- A covered exterior space on the ground level with ping pong and pool tables and perimeter grouped furnishings, low planters with aromatic plants and built-in benches, and pavers;
- A quiet courtyard open to the sky and divided into two slightly sunken decks surrounded by bioswales with low-water-use plants consisting of a mix of Native and Mediterranean plants adapted to the region’s climate; and
- A controlled-access rooftop terrace with semi-transparent solar panels and shallow planters with aromatic plants designed to attract hummingbirds.

Materials would include high-albedo pavement, recycled hardwood, and a variety of surfaces that allow for water infiltration such as wood decks and pavers. The Project would use potable water for room planting with micro-spray and reclaimed water for all other planting areas. All planting areas would require irrigation, which would be Rain Bird or equal, or drip irrigation. All trees would have individual emitters. Rain sensors would also be installed.

1.3.6 Access and Parking

No general student parking would be provided on site, as most residents would be first-year students and, per campus policy, first-year students are not allowed to bring cars onto campus unless they are granted a policy exception for a legitimate need. Residents that do have cars would park in existing residential lots R2 and R3, which allow overnight parking.

Overall, there are 32 existing parking spaces on the site and 34 spaces would exist on site after the Project is constructed. Five existing parking spaces in the daycare facility’s surface parking lot in the southwest corner of the site would be removed; 22 spaces would remain for the daycare facility. Along the southern frontage, the existing loading zone containing six spaces (one of which is a handicapped space) would be designated for accessible passenger loading. In addition, six new, paved parking spaces would be created in the northwestern corner of the Parkside Residential Community adjacent to a line of existing parking spaces on what is an existing grass area (southwest of the Project site), which would include two electric vehicle charging stations.

1.3.7 Utilities

1.3.7.1 Water and Wastewater

The Project would be served by the existing potable water and wastewater infrastructure near the Project site with new service connections provided for the new building. The new domestic water service would be extended from an existing water main line traversing east-west, along the northern edge of the Project site. A new connection to reclaimed water for irrigation would also be provided along the eastern side of the Project site. Proposed water use is estimated to be 11,000 gallons per day.

The new wastewater service would be extended from existing wastewater lines traversing north-south, along the eastern and western edges of the Project site. The Project's proposed wastewater generation would be approximately 9,900 gallons per day.[2]

1.3.7.2 Stormwater

Stormwater and condensation from the HVAC systems would be managed via new storm drain connections along the eastern side of the Project site that would be directed to a new underground cistern. The sizing for the storm drain system would be based on a rainfall rate of 2 inches per hour, as required by the California Plumbing Code. Captured rain water in the cistern would be filtered and reused for irrigation. In locations where runoff would be collected, bioswales with riparian plant species would filter stormwater prior to infiltration.

1.3.7.3 Electrical, Heating, and Cooling

Minor electrical system improvements, including a new switchboard, pad-mounted transformer, switch, and conduit, would be required to connect the Project to the campus electrical loop. The Project energy use is estimated to be 1,100,000 kilowatt-hours (kWh) per year. The Project would be served by independent and dedicated HVAC systems located in the building.

1.3.8 Construction

Demolition of the existing building is anticipated to occur in late July 2019, and construction of the project is expected to commence in mid-August 2019. The Project's construction duration is estimated to be at least 23 months. Construction is planned to occur continually without phasing. Construction equipment would include a tower crane and two concrete-placing booms, excavation/earthmoving equipment, forklifts, concrete trucks, delivery trucks, mobile cranes, and concrete pumps.

Construction staging is planned to occur off site within the existing campus laydown yard on Earl Warren Drive. The limits of construction disturbance, including disturbance from construction staging and laydown areas, are shown in Figure 5. East Atherton Street would remain open during construction. Temporary road closures on Earl Warren Drive during construction would be necessary to access sewer, reclaimed water, domestic water, and electrical utilities that are located within the roadway. Temporary construction parking would be located east of the Project site in the northwest corner of Parking Lot 14 on the campus. Construction worker vehicles and equipment would

[2] Assumed to be roughly 90 percent of the water consumption rate.

access the Project site primarily via Earl Warren Drive. Based on the Campus Master Plan Update EIR noise mitigation measures, construction hours would be from 7:00 a.m. to 7:00 p.m. Monday through Friday, and 9:00 a.m. to 6:00 p.m. on Saturday. There would be no construction activities on Sundays or federal holidays.

Construction would be performed by qualified contractors. Plans, specifications, and construction contracts would incorporate stipulations regarding standard CSU requirements and acceptable construction practices, including abatement of hazardous building materials per regulatory requirements,[3] grading and demolition, safety measures, vehicle operation and maintenance, excavation stability, erosion control, drainage alteration, groundwater disposal, traffic circulation, public safety, dust control, and noise generation.

1.3.9 Project Operations

Building occupancy is anticipated in August 2021. Upon operation, the Project would generate 18 total new staff positions, including 4 custodians, 1 mechanic, and 13 RAs. The RA positions would be filled by existing students. Unlike new academic buildings, new student housing would not support student enrollment increases above current levels. Therefore, the Project would not result in an increase in enrollment.

1.3.10 Summary of Project Modifications

The Campus Master Plan Update EIR evaluated the construction of a total of 522 student beds on the Project site in two 3- to 4-story L-shaped buildings with a central courtyard, as shown on the existing Master Plan in Figure 6. The modifications to the Project analyzed in this Addendum include a reduction in the number of student beds to 476 (net decrease of 46 student beds), the addition of 4 apartments for faculty and staff, and some changes to the building configurations and orientations on the site. Figure 7 shows the updated Master Plan with the modified building configuration on the Project site.

1.4 Project Approvals

This section describes discretionary actions required for Project approval by state and regional agencies. Discretionary approval includes, but is not limited to, approval of the schematic designs for the Project by the CSU BOT, as summarized in Table 1. Other approvals could also be necessary, as noted below.

[3] Hazardous building materials include, but are not limited to, asbestos building materials, lead-based paint, and other regulated materials such as fluorescent lights and electrical ballasts.

Table 1
Project Approvals

Authorizing Jurisdiction or Agency	Action
CSU Board of Trustees	
Schematic Plans for the Project and other related actions and approvals, as necessary	Approval
Division of the State Architect	
Accessibility Compliance	Approval
State Fire Marshal	
Facility Fire and Life Safety Compliance	Approval
Regional Water Quality Control Board	
National Pollutant Discharge Elimination System Permit (NPDES) – Stormwater Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) to Comply with NPDES Construction Permit	Approval/Enforcement
Air Pollution Control District	
Authority to Construct and/or Permits to Operate Hazardous Materials Removal and Asbestos Demolition	Approval Rule Compliance

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2 Environmental Analysis

As indicated in Section 1.1, *Purpose of an EIR Addendum*, an Addendum to the certified Campus Master Plan Update EIR has been determined to be the appropriate environmental documentation for the Project. Student housing was contemplated for the Project site in the Campus Master Plan and Campus Master Plan Update EIR. However, this Addendum to the Campus Master Plan Update EIR was prepared pursuant to CEQA Guidelines Section 15164 to address minor project changes, changed circumstances, and new information since the certification of the Program EIR.

This chapter evaluates the environmental implications of the changed circumstances, new information, and minor Project changes. As demonstrated in each resource topic discussed below in Sections 2.1 through 2.20, this chapter concludes that the changed circumstances, new information, and Project changes would not result in new significant impacts or substantial increases in the severity of impacts previously identified in the Campus Master Plan Update EIR. Overall, the currently proposed Housing Expansion Phase I – Parkside North Housing Project is within the scope of the project covered by the Campus Master Plan Update EIR and a Subsequent or Supplemental EIR is not required.

The currently proposed Housing Expansion Phase I – Parkside North Housing Project conforms to the use for the Project site shown on the Campus Master Plan map, which locates new student housing on the Project site, though the proposed building configuration has changed somewhat. Overall lot coverage would be similar to that contemplated in the Campus Master Plan. As discussed above in Section 1.3.10, *Summary of Project Modifications*, the key modifications to the Project since the certification of the Campus Master Plan Update EIR include a net reduction of 46 student beds and changes to the building configurations and orientations on the site.

Each environmental resource area that was analyzed in the Campus Master Plan Update EIR is discussed further below.

2.1 Aesthetics

The Campus Master Plan Update EIR analyzed aesthetics in Section 3.8. The currently proposed Project is similar in scale to the development envisioned for the Project site in the Campus Master Plan Update EIR. The Campus Master Plan Update EIR concluded that the Campus Master Plan would have less-than-significant visual character and lighting impacts with adherence to the Campus Master Plan's architectural guidelines. No impacts were identified related to scenic highways. This analysis evaluates potential impacts on scenic vistas, scenic resources within a scenic highway, visual character and quality, and light and glare, based on the most recent update to Appendix G of the CEQA Guidelines.

2.1.1 Scenic Vistas

The City of Long Beach General Plan Scenic Routes Element (1975) identifies scenic vistas in the City to include the ocean, port facilities, and oil islands from Ocean Boulevard, Bixby Park, Bluff Park, and other unnamed vantage points (City of Long Beach 1975). The Scenic Routes Element also notes that, while a separate political entity, Signal Hill is counted as one of the City's visual assets due to its panoramic views and prominence in the backdrop of many scenic vistas in the City. Flood control channels in the City are also identified as providing dramatic linear vistas (City of Long Beach 1975). The Scenic Routes Element identifies specific areas of importance for visual quality or scenic resources within the City, known as “scenic assets.” These scenic assets include those with historical, cultural, architectural, aesthetic, recreational, industrial, and open space/scenic importance. The Urban Design Element (2018) identifies scenic routes within the City as Ocean Boulevard and Livingston Drive, Ocean Boulevard on the Belmont Peninsula, the Promenade in Downtown, the Los Angeles River and San Gabriel River corridors, Appian Way along the Colorado Lagoon, Marine Stadium, Studebaker Road, the approach road to Rancho Los Cerritos, and the entire stretch of Pacific Coast Highway (City of Long Beach 2018). No scenic assets or scenic routes are located near or visible from the Project site. Additionally, the Campus Master Plan Update EIR did not identify scenic vistas on the campus. The Project site does not offer high-quality scenic views due to the relatively flat topography of the area and urban/suburban nature of the surrounding environment. Therefore, the Project would have no impact on scenic vistas.

2.1.2 Scenic Resources/Scenic Highways

The Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR) discussed that the Campus Master Plan would not have adverse impacts on views from state scenic highways. The Project site is not located along a state scenic highway. The nearest eligible—though not officially designated—state scenic highway is State Route 1 (SR-1, also known as Pacific Coast Highway), approximately 0.7 miles southwest of the Project site (Caltrans 2011). SR-1 is not visible from the Project site due to the flat topography of the surrounding area and presence of intervening landscaping and development. Therefore, the Project would not degrade scenic resources within a state scenic highway and no new or more severe impacts would occur.

2.1.3 Visual Character

Figure 8 shows the view from the southwestern corner of the Project site, looking north toward off-campus development. Figure 9 shows public views of the Project site. The Project site is located within an urbanized area, would constitute an infill development project, and would have building heights similar to other existing development on the campus. The new building would be three to four stories tall, while immediately surrounding development primarily consists of one- to two-story off-campus residences and campus buildings. Thus, the new building’s scale would be larger than other existing development in the immediate vicinity of the Project site; however, to travelers on East Atherton Street looking toward the CSULB campus, the new building would be consistent with other larger campus buildings visible from the roadway, including the Carpenter Performing Arts Center and the Walter Pyramid.

The Campus Master Plan Update EIR concluded that adherence to the Campus Master Plan’s architectural guidelines would ensure that new buildings, landscaping, and open space would be appropriate to their context. Standard University review procedures for compliance with the architectural guidelines would ensure that the specific design treatment selected for new facilities would be compatible with the character of each individual setting.

Based on Appendix G of the CEQA Guidelines, a project in an urbanized area may have a significant impact if it would conflict with applicable zoning and other regulations related to scenic quality. The Campus Master Plan is the only applicable plan governing scenic quality of campus buildings. Design elements, materials, glazing, and color for the facility’s exterior would be selected to create cohesive qualities between the new building and adjacent campus buildings in accordance with architectural guidelines referred to in the Campus Master Plan EIR, which are designed to enhance visual quality on the campus. Additionally, CSU design review is required during the schematic design approval process. Upon completion of construction, the long-term visual character of the Project would be established, which would consist of the new building with its architectural design, and associated landscaping. The Project would result in the construction of a new building on a site that is currently dominated by an open, grassy area, which would change the visual character of the Project site.

As a state agency, the CSU system and its campuses are not subject to local zoning and regulations. While not applicable to the campus, the City's zoning and regulations governing scenic quality are further discussed below to determine whether a new potentially significant impact related to visual character or quality would result due to a conflict with such zoning. The campus is located within the City's Institutional zoning district, the purpose of which is to create, preserve, and enhance areas of public and institutional land uses and to provide restrictions to minimize the effect of such uses on surrounding uses.

Chapter 21.34 of the City Municipal Code describes the regulations for the Institutional district. Section 21.34.245 specifies that special group residences, which include college dormitories that are located within the Institutional district shall conform to the standards specified in Section 21.52.271. Section 21.52.271 specifies that, in a nonresidential zone, the density of special group housing shall be limited to one unit per 200 square feet of lot area. As the area of the property is 77,680 square feet, a maximum of 388 units could be provided for consistency with the district.[4] With a proposed total number of units of 296,[5] the Project would not conflict with the density specifications of Section 21.25.271.

Maximum building height for the Institutional zoning district is 30 feet, or 1 foot for each 2 feet of distance from abutting residential districts, whichever is greater. The proposed building nearest to the residential district to the north of the Project site across East Atherton Street would be set back approximately 35 feet from the southern edge of East Atherton Street, which would be approximately 100 feet away from the residential district on the north side of East Atherton Street. Therefore, the specified building height could be up to approximately 50 feet along the northern edge of the building that fronts East Atherton Street. The proposed height of this building is approximately 45 to 50 feet on the northern edge of the building, as shown on Figure 4, which would not conflict with the building height specifications for the Institutional district.

Setback specifications for the Institutional district are 20 feet front, and 15 feet side/rear when adjoining an abutting residential district, and 4 feet side/rear when adjoining or abutting a nonresidential district. As discussed above, the proposed front setback of the Project is 35 feet, and the proposed side setbacks, which would be visible from East Atherton Street and abut Institutional zoning comprised of other campus lands, are 17 feet on the west and 20 feet on the east, both of which are greater than the specified 4-foot minimum. While the City's zoning regulations do not apply to the Project, the Project would not conflict with such zoning regulations.

Given the above discussion, no new or more severe impacts related to degradation of visual character or quality would occur with Project implementation.

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[4] 77,680 square feet ÷ 200 square feet = 388.4 units.
[5] Section 21.25.271 of the City Municipal Code considers bedrooms with one or two beds as one unit; in bedrooms with more than two beds, each bed is counted as a unit. The Project would include 228 rooms with one or two beds (228 units), 64 student beds in 16 four-bed suites (64 units), and 4 one- and two-bedroom apartments (4 units). 228 units + 64 units + 4 units = 296 units.

2.1.4 Light and Glare

The Campus Master Plan Update EIR concluded that no substantial change in overall security lighting levels as viewed from off-campus locations would occur with Campus Master Plan implementation. Existing sources of light and glare near the Project site include exterior lighting on nearby campus buildings, streetlights illuminating East Atherton Street, and headlights of vehicles traveling on East Atherton Street. The Project would include new exterior security lighting, which, like other lighting on campus, would be directed downward and shielded to minimize light trespass. Given the distance to sensitive residential uses across East Atherton Street, exterior lighting on the Project site would be minimally visible from off-site residences and would not be readily discernible from other existing sources of light. Therefore, no new or more severe impacts related to light and glare would occur with Project implementation.

2.2 Agriculture and Forestry Resources

As described in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR), the campus and vicinity do not contain any designated farmland, agricultural zoning, or Williamson Act contracts. The campus is located in a developed area and does not contain forest land. Therefore, no impact to agricultural and forestry resources would occur with either the Master Plan or the Project.

2.3 Air Quality

Potential long-term operational impacts of the Campus Master Plan Update on air quality were analyzed in Section 3.2 of the Campus Master Plan Update EIR. The EIR determined that long-term, significant and unavoidable air pollutant emissions resulting from Master Plan implementation accommodating 31,000 FTES would exceed South Coast Air Quality Management District (SCAQMD) daily thresholds for reactive organic gases (ROG), nitrogen oxides (NO_x), carbon monoxide (CO), and coarse particulate matter (PM_{10}). These exceedances would primarily occur due to increased vehicular trips associated with the increased student enrollment. While no feasible mitigation measures were identified to substantially reduce vehicular emissions, the EIR included a mitigation measure that aims to reduce stationary-source emissions to the extent feasible by requiring all new or renovation projects on campus to exceed Title 24 energy requirements by at least 15 percent,[6] which is applicable to the Project and listed in Appendix A of this Addendum.

Short-term, construction-related air quality impacts that would result from implementation of the Master Plan were analyzed in Section 3.9 of the Campus Master Plan Update EIR. The EIR found that construction emissions could exceed SCAQMD thresholds for NO_x and PM_{10} and included several mitigation measures to reduce construction-period air pollutant emissions to a less-than-significant level and which are applicable to the Project (see Appendix A of this Addendum). Impacts related to toxic air contaminants were found to be less than significant.

As discussed above, the Project would not result in an increase in enrollment. Rather, the Project would bring commuting students into campus housing and would reduce vehicle miles traveled (VMT) associated with

[6] As described in Section 1.3.4 above, the Project would achieve 10 percent greater than 2019 Title 24 standards. Since 2008, Title 24 standards have become increasingly stringent; between 2013 and 2016, there was a 28-percent reduction in energy use for residential land uses and, between 2016 and 2019, energy use was reduced further by 7 percent. Therefore, 10 percent above 2019 Title 24 standards would be a larger reduction than 15 percent above 2008 Title 24 standards.

commuter trips to campus. Therefore, the Project would not contribute to the significant unavoidable air quality impact associated with buildout of the Master Plan. Regardless, the Project would be required to exceed 2008 Title 24 energy requirements by at least 15 percent, as specified in the above EIR mitigation measure. In addition, the Project would be required to implement mitigation measures identified in the Campus Master Plan Update EIR related to controlling construction-period air pollutant emissions. Therefore, the Project would not result in any new or more severe impacts related to long-term or short-term air pollutant emissions beyond those described in the Campus Master Plan Update EIR.

2.4 Biological Resources

As described in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR), the campus is surrounded by urban development. No native resident or migratory fish or wildlife species, wildlife corridors, native wildlife nursery sites, special-status species, riparian or other sensitive habitat, or wetlands are known to exist on or near the campus. No habitat conservation plans encompass the campus, nor are any local policies regarding biological resources applicable to the campus. As described in the Section 1.3.2, *Project Location and Setting*, the unbuilt portions of the Project site consist of turf lawn, a sand volleyball court, raised garden beds, and landscape trees and shrubs that line the northern and eastern perimeters of the Project site. Therefore, no impact to biological resources would occur with either the Master Plan or the Project.

2.5 Cultural Resources

Potential impacts of the Master Plan on cultural resources were analyzed in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR) and Section 3.7 of the Campus Master Plan Update EIR. The Initial Study stated that no structures or features on the campus were considered historic resources and, thus, no impact would occur. With the passage of time since of the publication of the Initial Study, it is possible that some structures on the campus are now of historic age and/or may need to be evaluated for significance prior to demolition or alterations due to their historic associations. A historic evaluation of the existing HRL building on the Project site was conducted, provided in Appendix C, which determined that the HRL building is not a historic resource under CEQA. Therefore, demolition of this building would not result in new or more severe impacts related to historic resources beyond those described in the Campus Master Plan Update EIR.

The Campus Master Plan EIR discussed impacts on archaeological resources in Section 3.7. The EIR determined that construction facilitated by the Master Plan could potentially disturb unknown archaeological resources, and included a number of mitigation measures to ensure that no significant impacts would occur in the event of a discovery of unknown archaeological resources during construction. These measures are applicable to the Project, incorporated in Section 1.3, *Housing Expansion Phase I – Parkside North Housing Project* Description, and are listed in Appendix A of this Addendum.

A site-specific Archaeological and Paleontological Resources Assessment was conducted for the Project and is provided in Appendix B. The assessment included a records search of the California Historical Resources Information System (CHRIS) conducted at the South Central Coastal Information Center (SCCIC), a review of the Native American Heritage Commission's (NAHC's) Sacred Lands File (SLF), a paleontological records search from the Natural History Museum of Los Angeles County (LACM) archives, geological and paleontological desktop research, and a pedestrian survey. (See Section 2.7, *Geology and Soils*. for a discussion of paleontological resources and results and Section 2.18, *Tribal Cultural Resources*, for a discussion of NAHC SLF results.)

A total of 54 previously recorded cultural resources have been documented within a 0.5-mile radius of the CSULB campus. Twenty-nine of these resources have been recorded within the CSULB campus. Of the 29 previously recorded resources, one overlaps the Project site (CA-LAN-000705). This site was originally recorded in 1974 as a prehistoric lithic scatter with habitation debris. The site was updated in 1993, when it had been described as being partially damaged by construction, though subsurface components were noted to still present unique research possibilities. No portions of site CA-LAN-000705 were visible during the intensive pedestrian survey of the Project site.

A review of historic aerials and topographic maps indicate that the Project site was initially developed between 1982 and 1994. However, the majority of the Project site is made up of open land, now covered by grasses and other ornamental vegetation, and does not appear to have ever been extensively developed. Additionally, this review indicated that there were several natural features, particularly an unnamed creek or tributary running through the area and a wetland to the south, present near the Project site, which would have provided important resources to prehistoric peoples. Forty of the 54 sites identified during the records search are prehistoric or multicomponent sites, suggesting that prehistoric resources may be present in the areas within and surrounding the Project site. Therefore, there is a moderate to high sensitivity for prehistoric-era archaeological resources within the Project site. The fact that the Project site was not developed until fairly recently, suggests that the likelihood of encountering historic-era archaeological features, such as foundations, refuse deposits, or structural remnants, is low. Therefore, there is a low sensitivity for historic-era archaeological resources within the Project site.

With adherence to the five mitigation measures related to archaeological resources and human remains that were identified in the Campus Master Plan Update EIR and are listed in Appendix A of this Addendum, the Project would have a less-than-significant impact on archaeological resources. Therefore, no new or more severe impacts related to archaeological resources would occur beyond those described in the Campus Master Plan Update EIR.

2.6 Energy

The Master Plan's potential impacts related to energy use was not previously analyzed in detail in the Campus Master Plan Update EIR. The Campus Master Plan Update EIR included a brief qualitative discussion of energy consumption in the discussion of the Master Plan's significant irreversible effects in Chapter 5.0. The discussion disclosed that energy would be consumed as part of Master Plan implementation through both construction and operation, but would not be considered a wasteful use of resources. Consistent with the current CEQA standard of practice, this section provides a comprehensive, quantitative energy analysis of the Project.

2.6.1 Existing Conditions

2.6.1.1 Electricity

According to the U.S. Energy Information Administration (EIA), California used approximately 257,268 gigawatt-hours (GWh) of electricity in 2017 (EIA 2019a). The sector-specific breakdown for energy consumption in 2017 indicates that commercial uses utilized 46 percent of the state's electricity, followed by 35 percent for residential uses, and 19 percent for industrial uses (EIA 2019a). Electricity usage in California for differing land uses varies substantially by the type of uses in a building, type of construction materials used in a building, and the efficiency of all electricity-consuming devices within a building. Due to the state's energy efficiency building standards and efficiency and conservation programs, California's electricity use per capita in the residential sector is lower than any other state except Hawaii (EIA 2018a).

Southern California Edison (SCE) provides electricity to the Project site. SCE, a subsidiary of Edison International, serves approximately 180 cities in 11 counties across Central and Southern California. According to the California Public Utilities Commission (CPUC), SCE supplied approximately 84 billion kWh of electricity in 2017. Demand forecasts anticipate that approximately 75 billion kWh of electricity will be used in SCE's service area in 2020 (CPUC 2018).

SCE receives electric power from a variety of sources. According to CPUC's 2017 California Renewables Portfolio Standard Annual Report, 32% of SCE's power came from eligible renewables, such as biomass/waste, geothermal, small hydroelectric, solar, and wind sources (CPUC 2018).

2.6.1.2 Natural Gas

According to the EIA, California used approximately 2,110,829 million cubic feet of natural gas in 2017 (EIA 2019b). The majority of California's natural gas customers are residential and small commercial customers (core customers). These customers accounted for approximately 30 percent of the natural gas delivered by California utilities in 2017. Large consumers, such as electric generators and industrial customers (noncore customers), accounted for approximately 70 percent of the natural gas delivered by California utilities in 2017 (EIA 2019b). While the supply of natural gas in the United States and production in the lower 48 states has increased greatly since 2008, California produces little, and imports 90 percent of its supply of natural gas (EIA 2019b).

The Southern California Gas Company (SoCalGas) provides the Project site with natural gas service. SoCalGas' service territory encompasses approximately 20,000 square miles and more than 500 communities. In the California Energy Demand mid-energy demand scenario, natural gas demand is projected to have an annual growth rate of 0.03 percent in SoCalGas' service territory. As of 2017, approximately 7,206 million therms[7] were used in SoCalGas' service area per year. Around the estimated time of Project completion in 2020, natural gas demand is anticipated to be approximately 7,388 million therms per year in SoCalGas' service area (CEC 2014). In 2020, the total capacity available is also estimated to be 3.9 billion cubic feet per day[8] (California Gas and Electric Utilities 2016). This amount is approximately equivalent to 3.98 billion thousand British thermal units (kBtu) per day or 39.8 million therms per day. Over the course of a year, the available capacity would therefore be 14.5 billion therms per year, which is well above the existing and future anticipated natural gas demand in SoCalGas' service area.

2.6.1.3 Petroleum

California used approximately 18.6 billion gallons of petroleum (gasoline and diesel) in 2017 (EIA 2019c). This equates to a daily use of approximately 51 million gallons of petroleum. By sector, transportation uses utilize approximately 85.5 percent of the state's petroleum, followed by 11.1 percent from industrial, 2.5 percent from commercial, 0.9 percent from residential, and 0.01 percent from electric power uses (EIA 2018b). In California,

[7] One therm is equal to 100,000 Btu or 100 kBtu.
[8] One cubic foot of natural gas has approximately 1,020 Btu of natural gas or 1.02 kBtu of natural gas.

petroleum fuels refined from crude oil are the dominant source of energy for transportation sources. Petroleum usage in California includes petroleum products such as motor gasoline, distillate fuel, liquefied petroleum gases, and jet fuel. California has implemented policies to improve vehicle efficiency and to support use of alternative transportation, which are described in Section 2.6.2, *Regulatory Framework*, below. As such, the California Energy Commission (CEC) anticipates an overall decrease of petroleum demand in the state over the next decade.

2.6.2 Regulatory Framework

2.6.2.1 Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2012, new fuel economy standards for passenger cars and light trucks were approved for model years 2017 through 2021 (77 *Federal Register* [FR] 62624–63200). Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Energy Independence and Security Act of 2007

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA) was signed into law. In addition to setting increased Corporate Average Fuel Economy standards for motor vehicles, the EISA includes the following other provisions related to energy efficiency:

- Renewable Fuel Standard (RFS) (Section 202)
- Appliance and Lighting Efficiency Standards (Sections 301–325)
- Building Energy Efficiency (Sections 411–441)

This federal legislation requires ever-increasing levels of renewable fuels (the RFS) to replace petroleum (EPA 2015). The U.S. Environmental Protection Agency (EPA) is responsible for developing and implementing regulations to ensure that transportation fuel sold in the United States contains a minimum volume of renewable fuel. The RFS program regulations were developed in collaboration with refiners, renewable fuel producers, and many other stakeholders.

The RFS program was created under the Energy Policy Act of 2005 and established the first renewable fuel volume mandate in the United States. As required under the act, the original RFS program (RFS1) required 7.5 billion gallons of renewable fuel to be blended into gasoline by 2012. Under the EISA, the RFS program was expanded in several key ways that lay the foundation for achieving significant reductions in GHG emissions from the use of renewable fuels, reducing imported petroleum, and encouraging the development and expansion of the renewable fuels sector in the United States. The updated program is referred to as "RFS2" and includes the following:

- EISA expanded the RFS program to include diesel, in addition to gasoline.
- EISA increased the volume of renewable fuel required to be blended into transportation fuel from 9 billion gallons in 2008 to 36 billion gallons by 2022.

- EISA established new categories of renewable fuel, and set separate volume requirements for each one.
- EISA required the EPA to apply lifecycle GHG performance threshold standards to ensure that each category of renewable fuel emits fewer GHGs than the petroleum fuel it replaces.

Additional provisions of the EISA address energy savings in government and public institutions, research for alternative energy, additional research in carbon capture, international energy programs, and the creation of "green" jobs.

2.6.2.2 State

Warren-Alquist Act

The California Legislature passed the Warren-Alquist Act in 1974. The Warren-Alquist Act created the CEC. The legislation also incorporated the following three key provisions designed to address the demand side of the energy equation:

- It directed the CEC to formulate and adopt the nation's first energy conservation standards for both buildings constructed and appliances sold in California.
- The act removed the responsibility of electricity demand forecasting from the utilities, which had a financial interest in high-demand projections, and transferred it to a more impartial CEC.
- The CEC was directed to embark on an ambitious research and development program, with a particular focus on fostering what were characterized as non-conventional energy sources.

State of California Energy Action Plan

The CEC and CPUC approved the first State of California Energy Action Plan in 2003. The plan established shared goals and specific actions to ensure that adequate, reliable, and reasonably priced electrical power and natural gas supplies are provided, and identified policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers. In 2005, a second Energy Action Plan was adopted by the CEC and CPUC to reflect various policy changes and actions of the prior 2 years.

At the beginning of 2008, the CEC and CPUC determined that it was not necessary or productive to prepare a new energy action plan. This determination was based, in part, on a finding that the state's energy policies have been significantly influenced by the passage of Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (discussed below). Rather than produce a new energy action plan, the CEC and CPUC prepared an "update" that examines the state's ongoing actions in the context of global climate change.

Senate Bills 1078 (2002), 107 (2006), X1-2 (2011), 350 (2015) and 100 (2018)

Senate Bill (SB) 1078 established the California Renewables Portfolio Standard (RPS) Program and required that a retail seller of electricity purchase a specified minimum percentage of electricity generated by eligible renewable energy resources as defined in any given year, culminating in a 20-percent standard by December 31, 2017. These retail sellers include electrical corporations, community choice aggregators, and electric service providers. The bill also required the CEC to certify eligible renewable energy resources, design and implement an accounting system to verify compliance with the RPS by retail sellers, and allocate and award supplemental energy payments to cover above-market costs of renewable energy. SB 107 (2006) accelerated the RPS established by SB 1078 by requiring that 20 percent of electricity retail sales be served by renewable energy resources by 2010 (not 2017). Additionally, SB X1-2 (2011) requires all California utilities to generate 33 percent of their electricity from eligible renewable energy resources by 2020. Specifically, SB X1-2 sets a three-stage compliance period: by December 31, 2013, 20 percent had to come from renewables; by December 31, 2016, 25 percent had to come from renewables; and by December 31, 2020, 33 percent will come from renewables.

SB 350 (2015) expanded the RPS because it requires retail seller and publicly owned utilities to procure 50 percent of their electricity from eligible renewable energy resources by 2030, with interim goals of 40 percent by 2024 and 45 percent by 2027.

SB 100 (2018) accelerated and expanded the standards set forth in SB 350 by establishing that 44 percent of the total electricity sold to retail customers in California per year by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030 be secured from qualifying renewable energy sources. SB 100 also states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100 percent of the retail sales of electricity to California. This bill requires that the achievement of 100 percent zero-carbon electricity resources does not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Consequently, utility energy generation from non-renewable resources is expected to be reduced based on implementation of the 60-percent RPS in 2030. Therefore, any project's reliance on non-renewable energy sources would also be reduced.

Assembly Bill 1007 (2005)

AB 1007 (2005) required the CEC to prepare a statewide plan to increase the use of alternative fuels in California (State Alternative Fuels Plan). The CEC prepared the plan in partnership with the California Air Resources Board (CARB) and in consultation with other state agencies, plus federal and local agencies. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Assembly Bill 32 (2006) and Senate Bill 32 (2016)

In 2006, the State Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020. In 2016, the Legislature enacted SB 32, which extended the horizon year of the state's codified GHG reduction planning targets from 2020 to 2030, requiring California to reduce its GHG emissions to 40 percent below 1990 levels by 2030. In accordance with AB 32 and SB 32, CARB prepares scoping plans to guide the development of statewide policies and regulations for the reduction of GHG emissions. Many of the policy and regulatory concepts identified in the scoping plans focused on increasing energy efficiencies, using renewable resources, and reducing the consumption of petroleum-based fuels (such as gasoline and diesel). As such, the state's GHG emissions reduction planning framework creates co-benefits for energy-related resources. Additional information on AB 32 and SB 32 is provided in Section 2.8.2, *Relevant Plans, Policies, and Ordinances*, of this Addendum.

California Building Standards

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and non-residential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically to incorporate and consider new energy efficiency technologies and methodologies. The 2016 Title 24 building energy efficiency standards, which became effective on January 1, 2017, further reduce energy used in the state. In general, single-family homes built to the 2016 standards are anticipated to use approximately 28 percent less energy for lighting, heating, cooling, ventilation, and water heating than those built to the 2013 standards, and non-residential buildings built to the 2016 standards will use an estimated 5 percent less energy than those built to the 2013 standards (CEC 2015). The 2016 Title 24 standards are the current applicable building energy efficiency standards, and became effective on January 1, 2017. The 2019 Title 24 standards will continue to improve upon the 2016 standards for new construction of, and additions and alterations to, residential and nonresidential buildings. The 2019 standards will go into effect on January 1, 2020.

Title 24 also includes Part 11, the California Green Building Standards (CALGreen). The CALGreen standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, as well as schools and hospitals. The 2016 CALGreen standards became effective on January 1, 2017. The mandatory standards require the following:

- 20-percent mandatory reduction in indoor water use
- 50-percent diversion of construction and demolition waste from landfills
- Mandatory inspections of energy systems to ensure optimal working efficiency

Integrated Energy Policy Report

The CEC is responsible for preparing integrated energy policy reports that identify emerging trends related to energy supply, demand, conservation, public health and safety, and maintenance of a healthy economy. The CEC's 2018 Integrated Energy Policy Report discusses the state's policy goals of decarbonizing buildings, doubling energy efficiency savings and increasing flexibility in the electricity grid system to integrate more of renewable energy. Specifically for the decarbonizing of building energy, the goal would be achieved by designing future commercial and residential buildings to have their energy sourced almost entirely from electricity in place of natural gas. Regarding the increase in renewable energy flexibility, the goal would be achieved through increases in energy storage capacity within the state, increases in energy efficiency, and adjusting energy use to the time of day when the most amount of renewable energy is being generated. Over time as they are implemented, these policies and trends would serve to beneficially reduce the GHG emissions profile and energy consumption from projects.

State Vehicle Standards

In response to the transportation sector accounting for more than half of California's carbon dioxide (CO_2) emissions, AB 1493 was enacted in 2002. AB 1493 required CARB to set GHG emissions standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles whose primary use is noncommercial personal transportation in the state. The bill required that CARB set GHG emissions standards for motor vehicles manufactured in 2009 and all subsequent model years. The 2009-2012 standards resulted in a reduction in approximately 22 percent of GHG emissions compared to emissions from the 2002 fleet, and the 2013-2016 standards resulted in a reduction of approximately 30 percent.

In 2012, CARB approved a new emissions-control program for model years 2017 through 2025. The program combines the control of smog, soot, and global-warming gases with requirements for greater numbers of zero-emissions vehicles into a single package of standards called Advanced Clean Cars. By 2025, when the rules would be fully implemented, new automobiles would emit 34 percent fewer global-warming gases and 75 percent fewer smog-forming emissions (CARB 2011).

Although the focus of the state's vehicle standards is on the reduction of air pollutants and GHG emissions, one co-benefit of implementation of these standards is a reduced demand for petroleum-based fuels.

Sustainable Communities Strategy

The Sustainable Communities and Climate Protection Act of 2008, or SB 375, coordinates land use planning, regional transportation plans, and funding priorities to help California meet its GHG emissions reduction mandates established in AB 32. As codified in California Government Code Section 65080, SB 375 requires metropolitan planning organizations (MPOs; e.g., the Southern California Association of Governments [SCAG]) to include a Sustainable Communities Strategy (SCS) in their Regional Transportation Plan (RTP). The main focus of the SCS is to plan for growth in a fashion that will ultimately reduce GHG emissions, but the strategy is also part of a bigger effort to address other development issues, including transit and VMT, which influence the consumption of petroleum-based fuels.

2.6.2.3 Local

Southern California Association of Governments

SCAG's first-ever SCS was included in the 2012-2035 RTP/SCS, which was adopted by SCAG in April 2012. The SCS goals and policies that reduce VMT (and result in corresponding decreases in transportation-related fuel consumption) focus on transportation and land use planning and include building infill projects, locating residents closer to where they work and play, and designing communities with access to high quality transit service. Subsequently, SCAG adopted the 2016-2040 RTP/SCS. The goals and policies of the 2016-2040 RTP/SCS are substantially the same as those in the 2012-2035 RTP/SCS.

SCAG's 2016-2040 RTP/SCS presents a long-term transportation vision through the year 2040 for the six-county region of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura Counties. On April 7, 2016, the SCAG Regional Council adopted the 2016-2040 RTP/SCS, the mission of which is "leadership, vision, and progress which promote economic growth, personal well-being, and livable communities for all Southern Californians." The 2016-2040 RTP/SCS includes land use strategies that focus on urban infill growth and walkable, mixed-use communities in existing urbanized and opportunity areas. More mixed-use, walkable, and urban infill development would be expected to accommodate a higher proportion of growth in more energy-efficient housing types like townhomes, apartments, and smaller single-family homes, as well as more compact commercial buildings types. Furthermore, the 2016-2040 RTP/SCS includes transportation investments and land use strategies that encourage carpooling, increased transit use, active transportation opportunities, and promoting more walkable and mixed use communities which would potentially help to offset passenger VMT (SCAG 2016).

2.6.3 Thresholds of Significance

The significance criteria used to evaluate the Project impacts to energy are based on Appendix G of the CEQA Guidelines (14 California Code of Regulations [CCR] 15000 et seq.). According to Appendix G, a significant impact related to energy would occur if the project would:

a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy.
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

2.6.4 Impact Analysis

2.6.4.1 Wasteful, Inefficient, or Unnecessary Consumption of Energy

Implementation of the Project would increase the demand for electricity and natural gas at the Project site and petroleum consumption in the region during construction and operation.

Electricity

Construction

Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers, and HVAC) would be provided by SCE. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools and several construction trailers by managerial staff during the hours of construction activities. The majority of the energy used during construction would be from petroleum. The electricity used for construction activities would be temporary and minimal; therefore, impacts would be less than significant.

Operation

The operational phase would require electricity for multiple purposes including, but not limited to, building heating and cooling, lighting, appliances, and electronics. The Project is estimated to have a total electrical demand of 1,100,000 kWh per year (or 1.1 GWh per year). The residential electricity demand in 2017 was 19,468 GWh for Los Angeles County (CEC 2018). The Project would be built in accordance with the current Title 24 standards at the time of construction and CALGreen. Therefore, given that the Project's annual electricity demand would comprise a negligible portion of the Countywide demand (less than 0.01 percent), and the inherent increase in efficiency of building code regulations, the Project would not result in a wasteful use of energy. Impacts related to operational electricity use would be less than significant.

Natural Gas

Construction

Natural gas is not anticipated to be required during construction of the Project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the subsection “Petroleum,” below. Any minor amounts of natural gas that may be consumed as a result of Project construction would be negligible, and would not have an adverse effect; therefore, impacts would be less than significant.

Operation

Natural gas consumption during operation would be required for various purposes, including, but not limited to, building heating and cooling. Default natural gas generation rates in the California Emissions Estimator Model (CalEEMod) for the proposed land use and climate zone were used. According to these estimations, the Project would consume approximately 22,990 kBtu of natural gas per year. The residential natural gas consumption in 2017 was 1,116 million British thermal units (MMBtu) for the County (CEC 2018).

The Project would be subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Title 24, Part 11, contains additional energy measures that are applicable to the Project under CALGreen. Prior to Project approval, CSU building officials would ensure that the Project would exceed Title 24 requirements applicable at that time (i.e., 2008) by at least 15 percent pursuant to mitigation identified in the Campus Master Plan Update EIR (see Appendix A of this Addendum), as required by state regulations through the CSU schematic design review process. Thus, the natural gas consumption of the Project would not be considered inefficient or wasteful, and impacts would be less than significant.

Petroleum

Construction

Petroleum would be consumed throughout construction of the Project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities and on-site haul trucks involved in relocating dirt around the Project site would rely on diesel fuel. Construction workers would travel to and from the Project site throughout the duration of construction. It is assumed that construction workers would travel to and from the Project site in gasoline-powered vehicles.

Heavy-duty construction equipment of various types would be used during construction. CalEEMod was used to estimate construction equipment usage; results are included in Appendix D of this Addendum. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 26,644 hours, as summarized in Table 2.

Table 2
Hours of Operation for Construction Equipment

Phase	Hours of Equipment Use
Demolition	1,704
Site Preparation	2,204
Grading	840
Trenching	640
Building Construction	17,000
Paving	1,920
Architectural Coating	300
Total	**26,644**

Note: See Appendix D.

Fuel consumption from construction equipment was estimated by converting the total CO_2 emissions from each construction phase to gallons using conversion factors for CO_2 to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton CO_2 per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO_2 per gallon (The Climate Registry 2018). The estimated diesel fuel use from construction equipment is shown in Table 3.

Table 3
Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO_2 (MT)	kg CO_2/Gallon[a]	Gallons
Demolition	5	33.19	10.21	3,250.73
Site Preparation	3	30.93	10.21	3,029.38
Grading	3	25.34	10.21	2,481.88
Trenching	2	32.22	10.21	3,155.73
Building Construction	9	226.92	10.21	22,225.27
Paving	9	17.65	10.21	1,728.70
Architectural Coating	1	6.38	10.21	624.88
			Total	**36,496.57**

Source:
[a] The Climate Registry 2018.
Notes: See Appendix D, CO_2 = carbon dioxide; kg = kilogram; MT = metric ton

Fuel consumption from worker and vendor trips was estimated by converting the total CO_2 emissions from the construction phase to gallons using the conversion factors for CO_2 to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline fueled, and vendor vehicles are assumed to be diesel fueled.

Calculations for total worker and vendor fuel consumption are provided in Table 4, Table 5, and Table 6, respectively.

Table 4
Construction Worker Vehicle Gasoline Demand

Phase	Trips	Vehicle CO_2 (MT)	kg CO_2/Gallon[a]	Gallons
Demolition	434	2.21	8.78	251.71
Site Preparation	320	1.63	8.78	185.65
Grading	320	1.63	8.78	185.65
Trenching	560	2.81	8.78	320.05
Building Construction	43,500	214.62	8.78	24,444.19
Paving	420	2.01	8.78	228.93
Architectural Coating	1,800	8.60	8.78	979.50
			Total	**26,595.67**

Source:
[a] The Climate Registry 2018.
Notes:
CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
See Appendix D.

Table 5
Construction Vendor Truck Diesel Demand

Phase	Trips	Vehicle CO_2 (MT)[a]	kg/CO_2/Gallon[a]	Gallons
Demolition	0	0	10.21	0
Site Preparation	0	0	10.21	0
Grading	0	0	10.21	0
Trenching	0	0		0
Building Construction	6,500	79.92	10.21	7,827.62
Paving	0	0	10.21	0
Architectural Coating	0	0	10.21	0
			Total	**7,827.62**

Source:
[a] The Climate Registry 2018.
Notes:
CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
See Appendix D.

Table 6
Construction Haul Truck Diesel Demand

Phase	Trips	Vehicle CO_2 (MT)[a]	kg/CO_2/Gallon[a]	Gallons
Demolition	18	0.69	10.21	67.58
Site Preparation	0	0	10.21	0
Grading	0	0	10.21	0
Trenching	0	0		0
Building Construction	0	0	10.21	0
Paving	0	0	10.21	0
Architectural Coating	0	0	10.21	0
			Total	**67.58**

Source:
[a] The Climate Registry 2018.
Notes:
CO_2 = carbon dioxide; kg = kilogram; MT = metric ton.
See Appendix D.

As shown in Table 3 through Table 6, the Project is estimated to consume 70,987 gallons of petroleum during the construction phase. By comparison, approximately 23.8 billion gallons of petroleum would be consumed in California over the course of the Project's construction phase based on the California daily petroleum consumption estimate of approximately 52.9 million gallons per day (CEC 2016b); Countywide total petroleum use by vehicles is expected to be 1.4 billion gallons per year by 2020 (CARB 2018). The Project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Therefore, because petroleum use during construction would be temporary and relatively minimal, and would not be wasteful or inefficient, impacts would be less than significant.

Operation

The fuel consumption resulting from the Project's operational phase would be attributable to employees and students traveling to and from the Project site.

Petroleum fuel consumption associated with motor vehicles traveling to and from the Project site during operation is a function of VMT. As shown in Appendix D, the Project would not be expected to generate new VMT based on the trip generation rates developed in the Campus Master Plan Update EIR Traffic Study (see Appendix D of the Campus Master Plan Update EIR) and commuter reduction and the freshman vehicle policy discussed in Section 1.3.6, *Access and Parking*.

Additionally, over the lifetime of the Project, the fuel efficiency of the vehicles being used by the employees and students is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the Project site during operation would decrease over time. There are numerous regulations in place that require and encourage increased fuel efficiency. For example, CARB has adopted an approach to passenger vehicles by combining the control of smog-causing pollutants and GHG emissions into a single, coordinated package of standards. The approach also includes efforts to support and accelerate the number of plug-in hybrids and zero-emissions vehicles in California (CARB 2013). As such, operation of the Project is expected to use decreasing amounts of petroleum over time due to advances in fuel economy.

In summary, the Project would not result in a net increase in petroleum use during operation as a result of employees and students traveling to and from the Project site, and, due to efficiency increases, petroleum use would diminish over time. Given these considerations, petroleum consumption associated with the Project would not be considered inefficient or wasteful and impacts would be less than significant. Therefore, no new impacts related to energy use would occur with implementation of the Project.

2.6.4.2 Conflicts with Plans for Renewable Energy or Energy Efficiency

Title 24 of the California Code of Regulations contains energy efficiency standards for residential and non-residential buildings based on a state mandate to reduce California's energy demand. Specifically, Title 24 addresses a number of energy efficiency measures that impact energy used for lighting, water heating, heating, and air conditioning, including the energy impact of the building envelope such as windows, doors, wall/floor/ceiling assemblies, and roofs.

Part 6 of Title 24 specifically establishes energy efficiency standards for residential and non-residential buildings constructed in the State of California in order to reduce energy demand and consumption. The Project would comply with Title 24, Part 6, per state regulations. Furthermore, the Campus Master Plan Update EIR identified a mitigation measure requiring all new or renovation projects on campus to exceed Title 24 energy requirements by at least 15 percent, which is applicable to the Project and listed in Appendix A of this Addendum. Based on the foregoing, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts related to conflicts with renewable energy/energy efficiency plans during construction and operation of the Project would be less than significant. No new impacts related to conflicts with energy plans would occur with implementation of the Project.

2.7 Geology and Soils

2.7.1 Geotechnical Hazards

Potential impacts of the Master Plan related to geology and soils were analyzed in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR). Portions of the campus are subject to liquefaction. The campus is not subject to landslides and not known to have unstable soils. Because all facilities and improvements related to the Master Plan would be required to comply with all applicable regulations and standard University procedures designed to ensure the required level of geotechnical and seismic safety, including site-specific geotechnical investigations, all geology- and soils-related impacts were determined to be less than significant.

Twining Consulting, Inc., prepared a Geotechnical Engineering Evaluation Report for the Project on June 12, 2018. The geotechnical report included a review of readily available background data, a geotechnical site reconnaissance including observation of the general surficial conditions and a subsurface evaluation consisting of the advancement of three hollow-stem-auger borings and three cone penetration testing (CPT) soundings on site, and data analysis and laboratory testing. The Project site is underlain by alluvial and coastal deposits composed primarily of silt and clay. Groundwater was encountered at depths ranging between approximately 19 and 25 feet below the existing ground surface (bgs), though the historical high groundwater level is reported at approximately 10 feet bgs at the Project site (Twining Consulting 2018).

The Project site is located in a seismically active region. Earthquakes occurring within approximately 60 miles of the site are generally capable of generating ground shaking of engineering significance to the proposed construction. The closest known active fault to the Project site is the Newport-Inglewood fault, located less than 1 mile southwest. The Project would comply with the seismic design parameters described in the geotechnical report prepared for the Project, which were developed in accordance with the California State University (CSU) Seismic Requirements dated November 1, 2016 (Twining Consulting 2018).

The site is not located within an Alquist-Priolo Earthquake Fault Zone, therefore the Project site would not be subject to earthquake fault rupture. Like the rest of the campus, the Project site and surrounding area are relatively level and are not subject to landslides. The Project site is located within a state-designated Zone of Required Investigation for Liquefaction. A liquefaction analysis was performed as part of the geotechnical investigation of the site using a groundwater depth of 10 feet bgs. The analysis indicated that some thin soil layers at depths between approximately 10 and 25 feet are susceptible to liquefaction during major earthquake events (Twining Consulting 2018).

Based on the depth of liquefiable soils on site and the relatively flat nature of the site, the potential for lateral spreading is negligible. Dry seismic settlement at the site is also expected to be negligible. The total seismic settlement at the site is anticipated to range between 0.17 and 0.58 inches, with a differential settlement of less than 0.25 inches over a 50-foot span. The geotechnical investigation also found that soils on the site have a very low expansion potential (Twining Consulting 2018).

Additionally, the Project would not result in substantial erosion of soils during construction and would be required to implement a SWPPP in compliance with NPDES requirements, for projects involving construction sites that are 1 acre or more.

With adherence to the CSU Seismic Requirements including geotechnical investigations, and the California Building Code, which includes specific provisions for seismic safety, all geology- and soils-related impacts of the Project would be less than significant. No new or more severe impacts related to geology and soils would occur beyond those described in the Initial Study prepared for the Campus Master Plan Update.

2.7.2 Paleontological Resources

Paleontological resources have not been identified on the CSULB campus; however, the Campus Master Plan Update EIR includes a mitigation measure requiring suspension of work in the vicinity of any inadvertent discoveries of paleontological resources; this mitigation measure is applicable to the Project. A paleontological records search through the Natural History Museum of Los Angeles County (LACM) was conducted for the Project site and 0.5-mile radius buffer around the campus in March 2019. The results indicated that the LACM has no vertebrate fossil localities from within the Project site boundaries; however, two localities are located within the 0.5-mile radius buffer. Details of fossil localities are provided in Appendix B.

Past excavation activities in the area surrounding the Project site have encountered paleontological resources in Pleistocene alluvial and nearshore marine deposits. Review of the paleontological literature revealed numerous Pleistocene older alluvial and marine fossil vertebrate localities within and surrounding the City of Long Beach. Surficial Holocene alluvial deposits in the northeastern Project site are assigned low paleontological sensitivity on the surface increasing to high at a relatively shallow depth below the surface where Pleistocene alluvium or nearshore marine deposits are likely to be encountered. The remainder of the Project site is underlain by Pleistocene shallow marine deposits, which have high paleontological sensitivity throughout their extent.

With adherence to the applicable mitigation measure regarding paleontological resources described in the Campus Master Plan Update EIR, impacts of the Project on paleontological resources would be less than significant. Appendix B includes additional recommendations related to paleontological resources. No new or more severe impacts related to paleontological resources would occur beyond those described in the Campus Master Plan Update EIR.

2.8 Greenhouse Gas Emissions

Potential impacts related to greenhouse gas (GHG) emissions were not previously analyzed in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR) or the Campus Master Plan Update EIR. Therefore, this section provides a comprehensive analysis of GHG emissions of the Project.

2.8.1 Existing Conditions

Climate change refers to any significant change in measures of climate, such as temperature, precipitation, or wind patterns, lasting for an extended period (decades or longer). The Earth's atmosphere depends on the balance between energy entering and leaving the planet's system. Many factors, both natural and human, can cause changes in the Earth's energy balance, including variations in the sun's energy reaching the Earth, changes in the reflectivity of the Earth's atmosphere and surface, and changes in the "greenhouse effect," which affects the amount of heat retained by the Earth's atmosphere (EPA 2017).

The "greenhouse effect" is the trapping and build-up of heat in the atmosphere (troposphere) near the Earth's surface. The greenhouse effect traps heat in the troposphere through a threefold process as follows: short-wave radiation emitted by the Sun is absorbed by the Earth; the Earth emits a portion of this energy in the form of long-wave radiation; and GHGs in the upper atmosphere absorb this long-wave radiation and emit it into space and toward the Earth. The greenhouse effect is the natural process that contributes to regulating the Earth's temperature. Human activities that emit additional GHGs to the atmosphere increase the amount of infrared radiation that gets absorbed before escaping into space, thus enhancing the greenhouse effect and causing the Earth's surface temperatures to rise.

The scientific record of the Earth's climate shows that the climate system varies naturally over a wide range of time scales and that, in general, climate changes prior to the Industrial Revolution in the 1700s can be explained by natural causes, such as changes in solar energy, volcanic eruptions, and natural changes in GHG concentrations. Recent climate changes, in particular the warming observed over the past century, however, cannot be explained by natural causes alone. Rather, it is extremely likely that human activities have been the dominant cause of that warming since the mid-twentieth century and are the most significant driver of observed climate change (EPA 2017; IPCC 2013). Continued emissions of GHGs will cause further warming and changes in all components of the climate system, which is discussed further below.

2.8.1.1 Greenhouse Gases

As defined in California Health and Safety Code, Section 38505(g), for purposes of administering many of the state's primary GHG emissions reductions programs, GHGs include carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6), and nitrogen trifluoride (NF_3). See also CEQA Guidelines Section 15364.5. Some GHGs, such as CO_2, CH_4, and N_2O, are emitted to the atmosphere through natural processes *and* human activities. Of these gasses, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Manufactured GHGs, which have a much greater heat-absorption potential than CO_2, include fluorinated gases, such as HFCs, PFCs, and SF_6, and are associated with certain industrial products and processes.

The following paragraphs provide a summary of the most common GHGs and their sources.[9,10]

Carbon Dioxide. CO_2 is a naturally occurring gas and a by-product of human activities, and is the principal human-caused GHG that affects the Earth's radiative balance. Natural sources of CO_2 include respiration of bacteria, plants, animals, and fungus; evaporation from oceans; volcanic out-gassing; and decomposition of dead organic matter. Human activities that generate CO_2 are the combustion of coal, oil, natural gas, and wood.

Methane. CH_4 is a flammable gas and is the main component of natural gas. Methane is produced through anaerobic (without oxygen) decomposition of waste in landfills, flooded rice fields, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.

Nitrous Oxide. Sources of N_2O include soil cultivation practices (microbial processes in soil and water), especially the use of commercial and organic fertilizers, manure management, industrial processes (such as in nitric acid production, nylon production, and fossil-fuel-fired power plants), vehicle emissions, and the use of N_2O as a propellant (such as in rockets, racecars, aerosol sprays).

Fluorinated Gases. Fluorinated gases (also referred to as F-gases) are synthetic powerful GHGs emitted from many industrial processes. Fluorinated gases are commonly used as substitutes for stratospheric ozone-depleting substances (e.g., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). The most prevalent fluorinated gases include the following:

- **Hydrofluorocarbons:** HFCs are compounds containing only hydrogen, fluorine, and carbon atoms. HFCs are synthetic chemicals used as alternatives to ozone-depleting substances in serving many industrial, commercial, and personal needs. HFCs are emitted as by-products of industrial processes and are used in manufacturing.

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[9] Climate forcing substances include GHGs and other substances, such as black carbon and aerosols. This section's analysis focuses on the GHGs that are estimated by CalEEMod (i.e., CO_2, CH_4, and N_2O), and provides a summary of the seven GHGs identified in California Health and Safety Code Section 38505.

[10] The descriptions of these GHGs are summarized from the Intergovernmental Panel on Climate Change's Second Assessment Report and Fourth Assessment Report (IPCC 1995, 2007), the California Air Resources Board's Glossary of Terms Used in GHG Inventories (CARB 2015), and the U.S. Environmental Protection Agency's Glossary of Climate Change Terms (EPA 2016).

- **Perfluorocarbons:** PFCs are a group of human-made chemicals composed of carbon and fluorine only. Like HFCs, these chemicals were introduced as alternatives to ozone-depleting substances. The two main sources of PFCs are primary aluminum production and semiconductor manufacturing. Since PFCs have stable molecular structures and do not break down through chemical processes in the lower atmosphere, these chemicals have long lifetimes, ranging between 10,000 and 50,000 years.
- **Sulfur Hexafluoride:** SF_6 is a colorless gas soluble in alcohol and ether, and slightly soluble in water. SF_6 is used for insulation in electric power transmission and distribution equipment, semiconductor manufacturing, the magnesium industry, and as a tracer gas for leak detection.
- **Nitrogen Trifluoride:** NF_3 is used in the manufacture of a variety of electronics, including semiconductors and flat panel displays.

2.8.1.2 Global Warming Potential

GHGs in the atmosphere can contribute to climate change both directly and indirectly. Direct effects occur when the gas itself absorbs radiation. Indirect radiative forcing occurs when chemical transformations of the substance produce other GHGs, when a gas influences the atmospheric lifetimes of other gases, and/or when a gas affects atmospheric processes that alter the radiative balance of the Earth (e.g., affect cloud formation or albedo [i.e., the reflection of radiation]) (EPA 2016).

The Intergovernmental Panel on Climate Change (IPCC) developed the global warming potential (GWP) concept to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP of a GHG is defined as the ratio of the time-integrated radiative forcing from the instantaneous release of 1 kilogram of a trace substance relative to that of 1 kilogram of a reference gas (IPCC 2014). The reference gas used is CO_2; therefore, GWP-weighted emissions are measured in metric tons of CO_2 equivalent (MT CO_2e).

The current version of CalEEMod (version 2016.3.2) used in this analysis assumes that the GWP for CH_4 is 25 (so emissions of 1 MT of CH_4 are equivalent to emissions of 25 MT of CO_2), and the GWP for N_2O is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

2.8.1.3 Sources of Greenhouse Gas Emissions

Global Inventory

Anthropogenic GHG emissions worldwide in 2017 (the most recent year for which data is available) totaled approximately 50,860 million metric tons (MMT) of CO_2e, excluding land use change and forestry (PBL 2018). Six countries—China, the United States, the Russian Federation, India, Japan, and Brazil—and the European community accounted for approximately 65 percent of the total global emissions, or approximately 33,290 MMT CO_2e (PBL 2018). Table 7 presents the top GHG-emissions-producing countries.

Table 7
Six Top Greenhouse Gas Producer Countries and the European Union

Emitting Countries (listed in order of emissions)	Greenhouse Gas Emissions (MMT CO_2e)
China	13,530
United States	6,640
European Union	4,560
India	3,650
Russian Federation	2,220
Japan	1,490
Brazil	1,200
Total	**33,290**

Source: PBL 2018.
Note: MMT CO_2e = million metric tons of carbon dioxide equivalent.

National and State Inventories

Per the 2019 EPA Inventory of U.S. GHG Emissions and Sinks: 1990–2017, total U.S. GHG emissions were approximately 6,457 MMT CO_2e in 2017 (EPA 2019). The primary GHG emitted by human activities in the United States was CO_2, which represented approximately 81.6 percent of total GHG emissions (6,457 MMT CO_2e). The largest source of CO_2, and of overall GHG emissions, was fossil-fuel combustion, which accounted for approximately 93.2 percent of CO_2 emissions in 2017 (4,912.0 MMT CO_2e). Relative to the 1990 emissions level, gross U.S. GHG emissions in 2017 are 1.3 percent higher; however, the gross emissions are down from a high of 15.7 percent above the 1990 level that occurred in 2007. GHG emissions decreased from 2016 to 2017 by 0.5 percent (35.5 MMT CO_2e) and, overall, net emissions in 2017 were 13 percent below 2005 levels (EPA 2019).

According to California's 2000-2016 GHG emissions inventory (2018 edition), California emitted 429.40 MMT CO_2e in 2016, including emissions resulting from out-of-state electrical generation (CARB 2018a). The sources of GHG emissions in California include transportation, industry, electric power production from both in-state and out-of-state sources, residential and commercial activities, agriculture, high GWP substances, and recycling and waste. The California GHG emissions source categories and their relative contributions in 2016 are presented in Table 8.

Between 2000 and 2016, per capita GHG emissions in California have dropped from a peak of 14.0 MT per person in 2001 to 10.8 MT per person in 2016, representing a 23-percent decrease. In addition, total GHG emissions in 2016 were approximately 12 MMT CO_2e less than 2015 emissions. The declining trend in GHG emissions, coupled with programs that will continue to provide additional GHG reductions going forward, demonstrates that California will continue to reduce emissions below the statewide 2020 reduction target of 431 MT CO_2e, which is discussed below in Section 2.8.2, *Relevant Plans, Policies, and Ordinances* (CARB 2018a).

Table 8
Greenhouse Gas Emissions Sources in California

Source Category	Annual GHG Emissions (MMT CO_2e)	Percent of Total[a]
Transportation	169.38	39%
Industrial uses[b]	89.61	21%
Electricity generation[c]	68.58	16%
Residential and commercial uses	39.36	9%
Agriculture	33.84	8%
High GWP substances	19.78	5%
Recycling and waste	8.81	2%
Totals	**429.40**	**100%**

Source: CARB 2018a
Notes: GHG = greenhouse gas; MMT CO_2e = million metric tons of carbon dioxide equivalent; GWP = global warming potential. Emissions reflect 2016 California GHG inventory.
[a] Percentage of total has been rounded and total may not sum due to rounding.
[b] The Aliso Canyon natural gas leak event released 1.96 MMT CO_2e of unanticipated emissions in 2015 and 0.53 MMT CO_2e in 2016. These leak emissions will be fully mitigated according to legal settlement and are tracked separately from routine inventory emissions.
[c] Includes emissions associated with imported electricity, which account for 26.28 MMT CO_2e.

CSULB Inventory

According to CSULB's Climate Action Plan, the University emitted 59,930 MT CO_2e in 2010 (CSULB 2014). The sources of GHG emissions at the University include student and staff commuting, electricity and natural gas consumption, waste generation, emissions from refrigerants, air travel and fleet fuels. Relative contributions from these sources for 2010 are presented in Table 9.

Table 9
CSULB Greenhouse Gas Emissions Sources

Source Category	Annual GHG Emissions (MT CO_2e)	Percent of Total
Student commuting	31,580	53%
Purchased electricity	13,340	22%
Natural gas combustion	6,050	10%
Faculty and staff commuting	4,460	7%
Landfill waste	1,480	2%
Refrigerant emissions	1,360	2%
Air travel	1,270	2%
Fleet fuels	390	1%
Totals	**59,930**	**100%**

Source: CSULB 2014.
Notes: GHG = greenhouse gas; MT CO_2e = metric tons of carbon dioxide equivalent
Emissions reflect 2010 CSULB GHG inventory.

Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources through uncertain impacts related to future air temperatures and precipitation patterns. The 2014 IPCC Synthesis Report (IPCC 2014) indicated that warming of the climate system is unequivocal and, since the 1950s, many of the observed changes are unprecedented over decades to millennia. Signs that global climate change has occurred include warming of the atmosphere and ocean, diminished amounts of snow and ice, rising sea levels, and ocean acidification (IPCC 2014).

In California, climate change impacts have the potential to affect sea-level rise, agriculture, snowpack and water supply, forestry, wildfire risk, public health, frequency of severe weather events, and electricity demand and supply. The primary effect of global climate change has been a 0.2 degrees Celsius (°C; 0.36 degrees Fahrenheit [°F]) rise in average global tropospheric temperature per decade, determined from meteorological measurements worldwide between 1990 and 2005. Scientific modeling predicts that continued emissions of GHGs at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. A warming of approximately 0.2°C per decade is projected, and there are identifiable signs that global warming could take place.

Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. A scientific consensus confirms that climate change is already affecting California. The average temperatures in California have increased, leading to more extreme hot days and fewer cold nights. Shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year. Sea levels have risen, and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

An increase in annual average temperature is a reasonably foreseeable effect of climate change. Observed changes over the last several decades across the western United States reveal clear signals of climate change. Statewide average temperatures increased by approximately 1.7°F from 1895 to 2011, with warming the greatest in the Sierra Nevada (CCCC 2012). By 2050, California is projected to warm by approximately 2.7°F above 2000 averages, a threefold increase in the rate of warming over the last century. By 2100, average temperatures could increase by 4.1°F to 8.6°F, depending on emissions levels. Springtime warming—a critical influence on snowmelt—will be particularly pronounced. Summer temperatures will rise more than winter temperatures, and the increases will be greater in inland California compared to the coast. Heat waves will be more frequent, hotter, and longer. There will be fewer extremely cold nights (CCCC 2012). A decline in the Sierra Nevada snowpack, which accounts for approximately half of the surface water storage in California, by 30 percent to as much as 90 percent is predicted over the next 100 years (CAT 2006).

Model projections for precipitation over California continue to show the Mediterranean pattern of wet winters and dry summers, with seasonal, year-to-year, and decade-to-decade variability. For the first time, however, several of the improved climate models shift toward drier conditions by the mid- to late 21st century in central, and most notably, Southern California. By the late century, all projections show drying, and half of them suggest that 30-year average precipitation will decline by more than 10 percent below the historical average (CCCC 2012).

The following is a summary of current and future climate change impacts to resource areas in California, as discussed in *Safeguarding California: Reducing Climate Risk* (CNRA 2014).

Agriculture. The impacts of climate change on the agricultural sector are far more severe than the typical variability in weather and precipitation patterns that occur year to year. Some of the specific challenges faced by the agricultural sector and farmers include more drastic and unpredictable precipitation and weather patterns; extreme weather events that range from severe flooding to extreme drought to destructive storm events; significant shifts in water availably and water quality; changes in pollinator lifecycles; temperature fluctuations, including extreme heat stress and decreased chill hours; increased risks from invasive species and weeds, agricultural pests, and plant diseases; and disruptions to the transportation and energy infrastructure supporting agricultural production. These challenges and associated short-term and long-term impacts can have both positive and negative effects on agricultural production. Nonetheless, it is predicted that current crop and livestock production will suffer long-term negative effects resulting in a substantial decrease in the agricultural sector if not managed or mitigated (CNRA 2014).

Biodiversity and Habitat. The state's extensive biodiversity stems from its varied climate and assorted landscapes, which have resulted in numerous habitats where species have evolved and adapted over time. Specific climate change challenges to biodiversity and habitat include species migration in response to climatic changes, range shifts, and novel combinations of species; pathogens, parasites, and disease; invasive species; extinction risks; changes in the timing of seasonal life-cycle events; food web disruptions; and threshold effects (i.e., a change in the ecosystem that results in a "tipping point" beyond which irreversible damage or loss can be recouped). Habitat restoration, conservation, and resource management across California and through collaborative efforts among public, private, and nonprofit agencies has assisted in the effort to fight climate change impacts on biodiversity and habitat. One of the key measures in these efforts is ensuring species' ability to relocate as temperature and water availability fluctuate due to of climate change (CNRA 2014).

Energy. The energy sector provides California residents with a supply of reliable and affordable energy through a complex, integrated system. Specific climate change challenges for the energy sector include temperature rise, fluctuating precipitation patterns, increasing extreme weather events, and sea-level rise. Increasing temperatures and reduced snowpack negatively impact the availability of a steady flow of snowmelt to feed hydroelectric reservoirs. Higher temperatures also reduce the capacity of thermal power plants, since power plant cooling is less efficient at higher ambient temperatures. Increased temperatures will also increase electricity demand associated with air conditioning. Natural gas infrastructure in coastal California is threatened by sea-level rise and extreme storm events (CNRA 2014).

Forestry. Forests occupy approximately 33% of California's 100 million acres and provide key benefits such as wildlife habitat, absorption of CO_2, renewable energy, and building materials. The most significant climate-change-related risk to forests is accelerated risk of wildfire and more frequent and severe droughts. Droughts have resulted in more large-scale vegetation mortality, and, combined with increasing temperatures, have led to an overall increase in wildfire risks. Increased wildfire intensity subsequently increases public safety risks, property damage, fire suppression and emergency response costs, watershed and water quality impacts, and vegetation conversions. These factors contribute to decreased forest growth, geographic shifts in tree distribution, loss of fish and wildlife habitat, and decreased carbon absorption. Climate change may result in increased establishment of non-native species, particularly in rangelands where invasive species are already a problem. Invasive species may be able to exploit temperature or precipitation changes, or quickly occupy areas denuded by fire, insect mortality, or other climate change effects on vegetation (CNRA 2014).

Ocean and Coastal Ecosystems and Resources. Sea-level rise, changing ocean conditions, and other climate-change stressors are likely to exacerbate long-standing challenges related to ocean and coastal ecosystems, in addition to threatening people and infrastructure located along the California coastline and in coastal communities. Sea-level rise, in addition to more frequent and severe coastal storms and erosion, are threatening vital infrastructure such as roads, bridges, power plants, ports, airports, gasoline pipes, and emergency facilities, as well as negatively impacting coastal recreational assets such as beaches and tidal wetlands. Water quality and ocean acidification threaten the abundance of seafood and other plant and wildlife habitats throughout California and globally (CNRA 2014).

Public Health. Climate change can impact public health through various environmental changes and is the largest threat to human health in the 21st century. Changes in precipitation patterns affect public health primarily through potential for altered water supplies and extreme events such as heat, floods, droughts, and wildfires. Increased frequency, intensity, and duration of extreme heat and heat waves are likely to increase the risk of mortality due to heat-related illness, and exacerbate existing chronic health conditions. Other extreme weather events are likely to negatively impact air quality and increase or intensify respiratory illness such as asthma and allergies. Additional health effects that may be impacted by climate change include cardiovascular disease, vector-borne diseases, mental health impacts, and malnutrition. Increased frequency of these ailments is likely to subsequently increase the direct risk of injury and/or mortality (CNRA 2014).

Transportation. Residents of California rely on airports, seaports, public transportation, and an extensive roadway network to gain access to destinations, goods, and services. Although the transportation industry is a source of GHG emissions, it is also vulnerable to climate change risks. Particularly, sea-level rise and erosion threaten many coastal California roadways, airports, seaports, transit systems, bridge supports, and energy and fueling infrastructure. Increasing temperatures and extended periods of extreme heat threaten the integrity of the roadways and rail lines. High temperatures cause road surfaces to expand, which leads to increased pressure and pavement buckling. High temperatures can also cause rail breakages, which could lead to train derailment. Other forms of extreme weather events, such as extreme storm events, can negatively impact infrastructure, which can impair movement of people and goods, and potentially block evacuation routes and emergency access roads. Increased wildfires, flooding, erosion, landslides, mudslides, and rockslides can all profoundly impact the transportation system and pose a serious risk to public safety (CNRA 2014).

Water. Water resources in California support residences, plants, wildlife, farmland, landscapes, and ecosystems, and bring trillions of dollars in economic activity. Climate change could seriously impact the timing, form, and amount of precipitation; runoff patterns; and the frequency and severity of precipitation events. Higher temperatures reduce the amount of snowpack and lead to earlier snowmelt, which can impact water supply availability, natural ecosystems, and winter recreation. Water supply availability during the intense dry summer months is heavily dependent on the snowpack accumulated during winter. Increased risk of flooding has a variety of public health concerns, including water quality, public safety, property damage, displacement, and post-disaster mental health problems. Prolonged and intensified droughts can also negatively groundwater reserves and result in increased overdraft and subsidence. Droughts can also negatively impact agriculture and farmland throughout the state. The higher risk of wildfires can lead to increased erosion, which can negatively impact watersheds and result in poor water quality. Water temperatures are also prone to increase, which can negatively impact wildlife that rely on a specific range of temperatures for suitable habitat (CNRA 2014).

In March 2016, the California Natural Resources Agency released Safeguarding California: Implementation Action Plans, a document that shows how California is acting to convert the recommendations contained in the 2014 Safeguarding California plan into action (CNRA 2016). Additionally, in May 2017, the California Natural Resources Agency released the draft Safeguarding California Plan: 2017 Update, which is a survey of current programmatic responses for climate change, and contains recommendations for further actions (CNRA 2017). The California Natural Resources Agency released its Safeguarding California Plan: 2018 Update in January 2018, which provides a roadmap for state agencies to protect communities, infrastructure, services, and the natural environment from climate change impacts. The 2018 Safeguarding California Plan includes 69 recommendations across 11 sectors and more than 1,000 ongoing actions and next steps developed by scientific and policy experts across 38 state agencies (CNRA 2018). As with previous state adaptation plans, the 2018 Update addresses acceleration of warming across the state; more intense and frequent heat waves; greater riverine flows; accelerating sea-level rise; more intense and frequent drought; more severe and frequent wildfires; more severe storms and extreme weather events; shrinking snowpack and less overall precipitation; and ocean acidification, hypoxia, and warming.

2.8.2 Relevant Plans, Policies, and Ordinances

2.8.2.1 Federal

Federal Energy Policy and Conservation Act

In 1975, Congress enacted the Federal Energy Policy and Conservation Act, which established the first fuel economy standards for on-road motor vehicles in the United States. Pursuant to the act, the National Highway Traffic Safety Administration is responsible for establishing additional vehicle standards. In 2010, fuel economy standards were set at 27.5 miles per gallon (mpg) for new passenger cars and 23.5 mpg for new light trucks. Fuel economy is determined based on each manufacturer's average fuel economy for the fleet of vehicles available for sale in the United States.

Massachusetts vs. EPA

On April 2, 2007, in *Massachusetts v. EPA*, the Supreme Court directed the EPA Administrator to determine whether GHG emissions from new motor vehicles cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, or whether the science is too uncertain to make a reasoned decision. In making these decisions, the EPA Administrator is required to follow the language of Section 202(a) of the federal Clean Air Act. On December 7, 2009, the Administrator signed a final rule with two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act:

- The Administrator found that elevated concentrations of GHGs–CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6–in the atmosphere threaten the public health and welfare of current and future generations. This is referred to as the "endangerment finding."
- The Administrator further found the combined emissions of GHGs–CO_2, CH_4, N_2O, and HFCs–from new motor vehicles and new motor vehicle engines contribute to the GHG air pollution that endangers public health and welfare. This is referred to as the "cause or contribute finding."

These two findings were necessary to establish the foundation for regulation of GHGs from new motor vehicles as air pollutants under the Clean Air Act.

Energy Independence and Security Act

On December 19, 2007, President George W. Bush signed the Energy Independence and Security Act of 2007. Among other key measures, the act would do the following, which would aid in the reduction of national GHG emissions:

a) Increase the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard requiring fuel producers to use at least 36 billion gallons of biofuel in 2022.
b) Set a target of 35 miles per gallon for the combined fleet of cars and light trucks by model year 2020 and direct the National Highway Traffic Safety Administration (NHTSA) to establish a fuel economy program for medium- and heavy-duty trucks and create a separate fuel economy standard for work trucks.
c) Prescribe or revise standards affecting regional efficiency for heating and cooling products and procedures for new or amended standards, energy conservation, energy efficiency labeling for consumer electronic products, residential boiler efficiency, electric motor efficiency, and home appliances.

Federal Vehicle Standards

In response to the previously discussed U.S. Supreme Court ruling, the Bush Administration issued Executive Order (EO) 13432 in 2007 directing EPA, the Department of Transportation, and the Department of Energy to establish regulations that reduce GHG emissions from motor vehicles, non-road vehicles, and non-road engines by 2008. In 2009, NHTSA issued a final rule regulating fuel efficiency and GHG emissions from cars and light-duty trucks for model year 2011; and, in 2010, EPA and NHTSA issued a final rule regulating cars and light-duty trucks for model years 2012–2016 (EPA 2010).

In 2010, President Barack Obama issued a memorandum directing the Department of Transportation, Department of Energy, EPA, and NHTSA to establish additional standards regarding fuel efficiency and GHG reduction, clean fuels, and advanced vehicle infrastructure. In response to this directive, EPA and NHTSA proposed stringent, coordinated federal GHG and fuel economy standards for model years 2017-2025 light-duty vehicles. The proposed standards projected to achieve 163 grams per mile of CO_2 in model year 2025, on an average industry-fleet-wide basis, which is equivalent to 54.5 mpg if this level were achieved solely through fuel efficiency. The final rule was adopted in 2012 for model years 2017–2021, and NHTSA intends to set standards for model years 2022-2025 in a future rulemaking.

In addition to the regulations applicable to cars and light-duty trucks previously described, in 2011, EPA and NHTSA announced fuel economy and GHG standards for medium- and heavy-duty trucks for model years 2014-2018. The standards for CO_2 emissions and fuel consumption are tailored to three main vehicle categories: combination tractors, heavy-duty pickup trucks and vans, and vocational vehicles. According to EPA, this regulatory program will reduce GHG emissions and fuel consumption for the affected vehicles by 6 percent to 23 percent over the 2010 baselines.

In August 2016, EPA and NHTSA announced the adoption of the phase two program related to the fuel economy and GHG standards for medium- and heavy-duty trucks. The phase two program will apply to vehicles with model year 2018-2027 for certain trailers, and model years 2021-2027 for semi-trucks, large pickup trucks, vans, and all types and sizes of buses and work trucks. The final standards are expected to lower CO_2 emissions by approximately 1.1 billion MT and reduce oil consumption by up to 2 billion barrels over the lifetime of the vehicles sold under the program (EPA and NHTSA 2016).

In August 2018, The EPA and NHTSA released a notice of proposed rulemaking called Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). This rule would modify the existing Corporate Average Fuel Economy (CAFE) standards and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establish new standards covering model years 2021 through 2026. SAFE standards are expected to uphold model year 2020 standards through 2026 (NHTSA 2018).

Clean Power Plan and New Source Performance Standards for Electric Generating Units

On October 23, 2015, EPA published a final rule (effective December 22, 2015) establishing the Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units (80 FR 64510-64660), also known as the Clean Power Plan. These guidelines prescribe how states must develop plans to reduce GHG emissions from existing fossil-fuel-fired electric generating units. The guidelines establish CO_2 emission performance rates representing the best system of emission reduction for two subcategories of existing fossil-fuel-fired electric generating units: (1) fossil-fuel-fired electric utility steam-generating units, and (2) stationary combustion turbines. Concurrently, the EPA published a final rule (effective October 23, 2015) establishing Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units (80 FR 64661–65120). The rule prescribes CO_2 emission standards for newly constructed, modified, and reconstructed affected fossil-fuel-fired electric utility generating units. The U.S. Supreme Court stayed implementation of the Clean Power Plan pending resolution of several lawsuits. Additionally, in March 2017, President Trump directed the EPA Administrator to review the Clean Power Plan in order to determine whether it is consistent with current executive policies concerning GHG emissions, climate change and energy.

Council on Environmental Quality Guidance

On August 5, 2016, the Council on Environmental Quality (CEQ) released final guidance for federal agencies on considering the impacts of GHG emissions in National Environmental Protection Act (NEPA) reviews (CEQ 2016). This guidance supersedes the draft GHG and climate change guidance released by CEQ in 2010 and 2014. The final guidance applies to all proposed federal agency actions, including land and resource management actions. This guidance explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action. The guidance recommends that agencies quantify a proposed agency action's projected direct and indirect GHG emissions, taking into account available data and GHG quantification tools that are suitable for the proposed agency action. This guidance was withdrawn by the CEQ on April 5, 2017 as published in the 82 FR 16576 (CEQ 2017).

2.8.2.2 State

The statewide GHG emissions regulatory framework is summarized below by category: state climate change targets, building energy, renewable energy and energy procurement, mobile sources, solid waste, water, and other state regulations and goals. The following text describes executive orders, legislation, regulations, and other plans and policies that would directly or indirectly reduce GHG emissions and/or address climate change issues.

State Climate Change Targets

EO S-3-05. EO S-3-05 (June 2005) established the following statewide goals: GHG emissions should be reduced to 2000 levels by 2010, GHG emissions should be reduced to 1990 levels by 2020, and GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

AB 32 and CARB's Climate Change Scoping Plan. In furtherance of the goals established in EO S-3-05, the Legislature enacted AB 32, the California Global Warming Solutions Act of 2006. AB 32 requires California to reduce its GHG emissions to 1990 levels by 2020.

Under AB 32, CARB is responsible for and is recognized as having the expertise to carry out and develop the programs and requirements necessary to achieve the GHG emissions reduction mandate of AB 32. Under AB 32, CARB must adopt regulations requiring the reporting and verification of statewide GHG emissions from specified sources. This program is used to monitor and enforce compliance with established standards. CARB also is required to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions. AB 32 relatedly authorized CARB to adopt market-based compliance mechanisms to meet the specified requirements. Finally, CARB is ultimately responsible for monitoring compliance and enforcing any rule, regulation, order, emissions limitation, emissions reduction measure, or market-based compliance mechanism adopted.

In 2007, CARB approved a limit on the statewide GHG emissions level for 2020, consistent with the determined 1990 baseline (427 MMT CO_2e). CARB's adoption of this limit is in accordance with Health and Safety Code Section 38550.

Further, in 2008, CARB adopted the Climate Change Scoping Plan: A Framework for Change (Scoping Plan) in accordance with Health and Safety Code Section 38561. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020. The Scoping Plan evaluates opportunities for sector-specific reductions, integrates all CARB and Climate Action Team early actions and additional GHG reduction features by both entities, identifies additional measures to be pursued as regulations, and outlines the role of a cap-and-trade program. The key elements of the Scoping Plan are the following (CARB 2008):

- Expanding and strengthening existing energy efficiency programs and building and appliance standards.
- Achieving a statewide renewable energy mix of 33 percent.
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions.
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets.
- Adopting and implementing measures pursuant to existing state laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard.
- Creating targeted fees, including a public goods charge on water use, fees on high GWP gases, and a fee to fund the administrative costs of the state's long-term commitment to AB 32 implementation.

In the Scoping Plan, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected 2020 emissions level (i.e., those emissions that would occur in 2020 absent GHG-reducing laws and regulations, referred to as "business-as-usual"). For purposes of calculating this percent reduction, CARB assumed that all new electricity generation would be supplied by natural gas plants, that no further regulatory action would impact vehicle fuel efficiency, and that building energy efficiency codes would be held at 2005 standards.

In the 2011 Final Supplement to the Scoping Plan's Functional Equivalent Document, CARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the business-as-usual conditions (CARB 2011). When the 2020 emissions level projection also was updated to account for newly implemented regulatory measures, including Pavley I (model years 2009-2016) and the RPS (12 percent to 20 percent) (CPUC 2015), CARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the business-as-usual conditions.

In 2014, CARB adopted the First Update to the Climate Change Scoping Plan: Building on the Framework (First Update). The stated purpose of the First Update is to "highlight California's success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050" (CARB 2014). The First Update found that California is on track to meet the 2020 emissions reduction mandate established by AB 32, and noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80% below 1990 levels by 2050 if the state realizes the expected benefits of existing policy goals.

In conjunction with the First Update, CARB identified "six key focus areas comprising major components of the state's economy to evaluate and describe the larger transformative actions that will be needed to meet the state's more expansive emission reduction needs by 2050" (CARB 2014). Those six areas are energy, transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure), agriculture, water, waste management, and natural and working lands. The First Update identifies key recommended actions for each sector that will facilitate achievement of EO S-3-05's 2050 reduction goal.

CARB's research efforts presented in the First Update indicate that it has a "strong sense of the mix of technologies needed to reduce emissions through 2050" (CARB 2014). Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings, and industrial machinery; decarbonizing electricity and fuel supplies; and the rapid market penetration of efficient and clean energy technologies.

As part of the First Update, CARB recalculated the state's 1990 emissions level using more recent GWPs identified by the IPCC. Using the recalculated 1990 emissions level (431 MMT CO_2e) and the revised 2020 emissions level projection identified in the 2011 Final Supplement (CARB 2011), CARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the business-as-usual conditions (CARB 2014).

On January 20, 2017, CARB released its 2017 Climate Change Scoping Plan Update (Second Update) for public review and comment (CARB 2017). This update presents CARB's strategy for achieving the state's 2030 GHG target as established in SB 32 (discussed below), including continuing the Cap-and-Trade Program through 2030, and includes a new approach to reduce GHGs from refineries by 20 percent. The Second Update incorporates approaches to cutting short-lived climate pollutants (SLCPs) under the Short-Lived Climate Pollutant Reduction Strategy (a planning document that was adopted by CARB in March 2017), acknowledges the need for reducing emissions in agriculture, and highlights the work underway to ensure that California's natural and working lands increasingly sequester carbon. During development of the Second Update, CARB held a number of public workshops in the natural and working lands, agriculture, energy, and transportation sectors to inform development of the 2030 Scoping Plan. When discussing project-level GHG emissions reduction actions and thresholds, the Second Update states, "achieving no net increase in GHG emissions is the correct overall objective, but it may not be appropriate or feasible for every development project. An inability to mitigate a project's GHG emissions to zero does not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change under CEQA" (CARB 2017). The Second Update was approved by CARB's Governing Board on December 14, 2017.

EO B-30-15. EO B-30-15 (April 2015) identified an interim GHG reduction target in support of targets previously identified under EO S-3-05 and AB 32. EO B-30-15 set an interim target goal of reducing statewide GHG emissions to 40% below 1990 levels by 2030 to keep California on its trajectory toward meeting or exceeding the long-term goal of reducing statewide GHG emissions to 80 percent below 1990 levels by 2050, as set forth in EO S-3-05. To facilitate achievement of this goal, EO B-30-15 calls for an update to CARB's Scoping Plan to express the 2030 target in terms of MMT CO_2e. The executive order also calls for state agencies to continue to develop and implement GHG emission reduction programs in support of the reduction targets. EO B-30-15 does not require local agencies to take any action to meet the new interim GHG reduction target.

SB 32 and AB 197. SB 32 and AB 197 (enacted in 2016) are companion bills that set a new statewide GHG reduction targets, make changes to CARB's membership, increase legislative oversight of CARB's climate-change-based activities, and expand dissemination of GHG and other air-quality-related emissions data to enhance transparency and accountability. More specifically, SB 32 codified the 2030 emissions reduction goal of EO B-30-15 by requiring CARB to ensure that statewide GHG emissions are reduced to 40 percent below 1990 levels by 2030. AB 197 established the Joint Legislative Committee on Climate Change Policies, consisting of at least three members of the Senate and three members of the Assembly, to provide ongoing oversight over implementation of the state's climate policies. AB 197 also added two members of the Legislature to CARB as nonvoting members; requires CARB to make available and update (at least annually via its website) emissions data for GHGs, criteria air pollutants, and toxic air contaminants from reporting facilities; and requires CARB to identify specific information for GHG emissions reduction measures when updating the Scoping Plan.

SB 605 and SB 1383. SB 605 (2014) requires CARB to complete a comprehensive strategy to reduce emissions of SLCPs in the state, and SB 1383 (2016) requires CARB to approve and implement that strategy by January 1, 2018. SB 1383 also establishes specific targets for the reduction of SLCPs (40 percent below 2013 levels by 2030 for CH_4 and HFCs, and 50 percent below 2013 levels by 2030 for anthropogenic black carbon), and provides direction for reductions from dairy and livestock operations and landfills. Accordingly, and as mentioned above, CARB adopted its Short-Lived Climate Pollutant Reduction Strategy (SLCP Reduction Strategy) in March 2017. The SLCP Reduction Strategy establishes a framework for the statewide reduction of emissions of black carbon, CH_4, and fluorinated gases.

Building Energy

Title 24, Part 6. Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Although not initially promulgated to reduce GHG emissions, Part 6 of Title 24 specifically establishes Building Energy Efficiency Standards that are designed to ensure that new and existing buildings in California achieve energy efficiency and preserve outdoor and indoor environmental quality. These energy efficiency standards are reviewed every few years by the Building Standards Commission and CEC (and revised if necessary) (California Public Resources Code [PRC] Section 25402[b][1]). The regulations receive input from members of industry and the public, with the goal of "reducing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy" (PRC Section 25402). These regulations are carefully scrutinized and analyzed for technological and economic feasibility (PRC Section 25402[d]) and cost effectiveness (PRC Sections 25402[b][2] and [b][3]). These standards are updated to consider and incorporate new energy-efficient technologies and construction methods. As a result, these standards save energy, increase electricity supply reliability, increase indoor comfort, avoid the need to construct new power plants, and help preserve the environment.

The current Title 24 standards are the 2016 Title 24 Building Energy Efficiency Standards, which became effective January 1, 2017. The 2019 Title 24 Building Energy Efficiency Standards, which will be effective January 1, 2020, will further reduce energy used and associated GHG emissions compared to current standards. In general, single-family residences built to the 2019 standards are anticipated to use approximately 7 percent less energy due to energy efficiency measures than those built to the 2016 standards; once rooftop solar electricity generation is factored in, single-family residences built under the 2019 standards will use approximately 53 percent less energy than those under the 2016 standards (CEC 2018). Nonresidential buildings built to the 2019 standards are anticipated to use an estimated 30 percent less energy than those built to the 2016 standards (CEC 2018).

Title 24, Part 11. In addition to CEC's efforts, in 2008, the California Building Standards Commission adopted the nation's first green building standards. The California Green Building Standards Code is commonly referred to as CALGreen, and establishes minimum mandatory standards and voluntary standards pertaining to the planning and design of sustainable site development, energy efficiency (in excess of the California Energy Code requirements), water conservation, material conservation, and interior air quality (24 CCR Part 11). The CALGreen 2016 standards took effect in January 2011 and instituted mandatory minimum environmental performance standards for all ground-up, new construction of commercial, low-rise residential, and state-owned buildings, and schools and hospitals. The CALGreen 2016 standards became effective on January 1, 2017. The mandatory standards require the following (24 CCR Part 11):

- Mandatory reduction in indoor water use through compliance with specified flow rates for plumbing fixtures and fittings.
- Mandatory reduction in outdoor water use through compliance with a local water efficient landscaping ordinance or the California Department of Water Resources' Model Water Efficient Landscape Ordinance.
- Diversion of 65 percent of construction and demolition waste from landfills.
- Mandatory inspections of energy systems to ensure optimal working efficiency.
- Inclusion of electric vehicle charging stations or designated spaces capable of supporting future charging stations.
- Low-pollutant-emitting exterior and interior finish materials, such as paints, carpets, vinyl flooring, and particle boards.

The CALGreen standards also include voluntary efficiency measures that are provided at two separate tiers and implemented at the discretion of local agencies and applicants. CALGreen's Tier 1 standards call for a 15-percent improvement in energy requirements, stricter water conservation, 65-percent diversion of construction and demolition waste, 10-percent recycled content in building materials, 20-percent permeable paving, 20-percent cement reduction, and cool/solar-reflective roofs. CALGreen's more rigorous Tier 2 standards call for a 30-percent improvement in energy requirements, stricter water conservation, 75-percent diversion of construction and demolition waste, 15-percent recycled content in building materials, 30-percent permeable paving, 25-percent cement reduction, and cool/solar-reflective roofs.

The CPUC, CEC, and CARB also have a shared, established goal of achieving zero net energy for new construction in California. The key policy timelines are that all new residential construction in California will be zero net energy by 2020, and all new commercial construction in California will be zero net energy by 2030 (CPUC 2013).[11] As most recently defined by CEC in its 2015 Integrated Energy Policy Report, a zero net energy code building is "one where the value of the energy produced by on-site renewable energy resources is equal to the value of the energy consumed annually by the building" using the CEC's time-dependent valuation metric (CEC 2015).

Title 20. Title 20 of the California Code of Regulations requires manufacturers of appliances to meet state and federal standards for energy and water efficiency. Performance of appliances must be certified through the CEC to demonstrate compliance with standards. New appliances regulated under Title 20 include refrigerators, refrigerator-freezers, and freezers; room air conditioners and room air-conditioning heat pumps; central air conditioners; spot air conditioners; vented gas space heaters; gas pool heaters; plumbing fittings and plumbing fixtures; fluorescent lamp ballasts; lamps; emergency lighting; traffic signal modules; dishwaters; clothes washers and dryers; cooking products; electric motors; low-voltage dry-type distribution transformers; power supplies; televisions and consumer audio and video equipment; and battery charger systems. Title 20 presents protocols for testing each type of appliance covered under the regulations, and appliances must meet the standards for energy performance, energy design, water performance, and water design. Title 20 contains three types of standards for appliances: federal and state standards for federally regulated appliances, state standards for federally regulated appliances, and state standards for non-federally regulated appliances.

SB 1*.* SB 1 (2006) established a $3 billion rebate program to support the goal of the state to install rooftop solar energy systems with a generation capacity of 3,000 megawatts through 2016. SB 1 added sections to the PRC, including Chapter 8.8, California Solar Initiative, that require building projects applying for ratepayer-funded incentives for photovoltaic systems to meet minimum energy efficiency levels and performance requirements. Section 25780 established that it is a goal of the state to establish a self-sufficient solar industry in which solar energy systems are a viable mainstream option for homes and businesses within 10 years of adoption, and to place solar energy systems on 50 percent of new homes within 13 years of adoption. SB 1, also termed "GoSolarCalifornia," was previously titled "Million Solar Roofs."

AB 1470*.* This bill established the Solar Water Heating and Efficiency Act of 2007. The bill made findings and declarations of the Legislature relating to the promotion of solar water heating systems and other technologies to reduce natural gas demand. The bill defined several terms for purposes of the act. The bill required the CEC to evaluate the data available from a specified pilot program, and, if it made a specified determination, to design and implement a program of incentives for the installation of 200,000 solar water heating systems in homes and businesses throughout the state by 2017.

[11] It is expected that achievement of the zero net energy goal will occur via revisions to the Title 24 standards.

AB 1109. Enacted in 2007, AB 1109 required the CEC to adopt minimum energy efficiency standards for general purpose lighting to reduce electricity consumption by 50 percent for indoor residential lighting and by 25 percent for indoor commercial lighting.

Renewable Energy and Energy Procurement

SB 1078. SB 1078 (2002) established the RPS program, which requires an annual increase in renewable generation by the utilities equivalent to at least 1 percent of sales, with an aggregate goal of 20 percent by 2017. This goal was subsequently accelerated, requiring utilities to obtain 20 percent of their power from renewable sources by 2010.

SB 1368. SB 1368 (2006) requires the CEC to develop and adopt regulations for GHG emissions performance standards for the long-term procurement of electricity by local publicly owned utilities. These standards must be consistent with the standards adopted by the CPUC. This effort will help protect energy customers from financial risks associated with investments in carbon-intensive generation by allowing new capital investments in power plants whose GHG emissions are as low as or lower than new combined-cycle natural gas plants by requiring imported electricity to meet GHG performance standards in California and by requiring that the standards be developed and adopted in a public process.

SB X1 2. SB X1 2 (2011) expanded the RPS by establishing that 20 percent of the total electricity sold to retail customers in California per year by December 31, 2013, and 33 percent by December 31, 2020, and in subsequent years be secured from qualifying renewable energy sources. Under the bill, a renewable electrical generation facility is one that uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and that meets other specified requirements with respect to its location. In addition to the retail sellers previously covered by the RPS, SB X1 2 added local, publicly owned electric utilities to the RPS.

SB 350. SB 350 (2015) further expanded the RPS by establishing that 50 percent of the total electricity sold to retail customers in California per year by December 31, 2030, be secured from qualifying renewable energy sources. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses on which an energy-efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal.

SB 100. SB 100 (2018) increased the standards set forth in SB 350 establishing that 44 percent of the total electricity sold to retail customers in California per year by December 31, 2024, 52 percent by December 31, 2027, and 60 percent by December 31, 2030 be secured from qualifying renewable energy sources. SB 100 states that it is the policy of the state that eligible renewable energy resources and zero-carbon resources supply 100 percent of the retail sales of electricity to California. This bill requires that the achievement of 100-percent zero-carbon electricity resources do not increase the carbon emissions elsewhere in the western grid and that the achievement not be achieved through resource shuffling.

Executive Order B-55-18. On September 10, 2018, Governor Brown signed EO B-55-18, to achieve carbon neutrality by moving the State of California to 100-percent clean energy by 2045. This EO also includes specific measures to reduce GHG emissions via clean transportation, energy efficient buildings, directing cap-and-trade funds to disadvantaged communities, and better management of the state's forestland.

Mobile Sources

AB 1493. In a response to the transportation sector accounting for more than half of California's CO_2 emissions, AB 1493 was enacted in July 2002. AB 1493 required CARB to set GHG emission standards for passenger vehicles, light-duty trucks, and other vehicles determined by the state board to be vehicles that are primarily used for noncommercial personal transportation in the state. The bill required that CARB set GHG emission standards for motor vehicles manufactured in 2009 and all subsequent model years. CARB adopted the standards in September 2004. In 2009–2012, standards resulted in a reduction of approximately 22 percent in GHG emissions compared to emissions from the 2002 fleet, and in 2013–2016, standards resulted in a reduction of approximately 30 percent.

EO S-1-07. Issued on January 18, 2007, EO S-1-07 sets a declining low-carbon fuel standard for GHG emissions measured in CO_2e grams per unit of fuel energy sold in California. The target of the low-carbon fuel standard is to reduce the carbon intensity of California passenger vehicle fuels by at least 10 percent by 2020. Carbon intensity measures the amount of GHG emissions in the lifecycle of a fuel, including extraction/feedstock production, processing, transportation, and final consumption, per unit of energy delivered. CARB adopted the implementing regulation in April 2009. The regulation is expected to increase the production of biofuels, including those from alternative sources, such as algae, wood, and agricultural waste.

SB 375. SB 375 (2008) addresses GHG emissions associated with the transportation sector through regional transportation and sustainability plans. SB 375 required CARB to adopt regional GHG reduction targets for the automobile and light-truck sector for 2020 and 2035. Regional MPOs are then responsible for preparing a SCS within their RTP. The goal of the SCS is to establish a forecasted development pattern for the region that, after considering transportation measures and policies, will achieve, if feasible, the GHG reduction targets. If an SCS is unable to achieve the GHG reduction target, an MPO must prepare an Alternative Planning Strategy demonstrating how the GHG reduction target would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.

Pursuant to Government Code Section 65080(b)(2)(K), an SCS does not regulate the use of land; supersede the land use authority of cities and counties; or require that a city's or county's land use policies and regulations, including those in a general plan, be consistent with it. Nonetheless, SB 375 makes regional and local planning agencies responsible for developing those strategies as part of the federally required metropolitan transportation planning process and the state-mandated housing element process.

In September 2010, CARB adopted the SB 375 targets for the regional MPOs. The targets for SCAG are an 8-percent reduction in emissions per capita by 2020 and a 13-percent reduction by 2035 below 2005 levels. Achieving these goals through adoption of an SCS is the responsibility of the MPOs. SCAG's RTP/SCS was adopted by the SCAG Regional Council in April 2012. The plan quantified a 9-percent reduction in emissions per capita by 2020 and a 16-percent reduction by 2035 (SCAG 2012). On June 4, 2012, the CARB executive officer issued an executive order accepting SCAG's quantification of GHG reductions and the determination that implementation of the SCS would achieve the GHG emissions reduction targets established by CARB. On April 4, 2016, the SCAG Regional Council adopted the 2016 RTP/SCS, which builds on the progress made in the 2012 RTP/SCS. The updated RTP/SCS quantified an 8-percent reduction in emissions per capita by 2020, an 18-percent reduction by 2035, and a 21-percent reduction by 2040 below 2005 levels (SCAG 2016a).

Advanced Clean Cars Program. In January 2012, CARB approved the Advanced Clean Cars program, an emissions-control program for model years 2015 through 2025. The program combines the control of smog- and soot-causing pollutants and GHG emissions into a single, coordinated package. The package includes elements to reduce smog-forming pollution, reduce GHG emissions, promote clean cars, and provide the fuels for clean cars (CARB 2011). To improve air quality, CARB implemented new emission standards to reduce smog-forming emissions beginning with 2015 model-year vehicles. It is estimated that by 2025, cars will emit 75 percent less smog-forming pollution than the average new car sold before 2012. To reduce GHG emissions, CARB, in conjunction with the EPA and NHTSA, adopted new GHG standards for model years 2017 to 2025 vehicles; the new standards are estimated to reduce GHG emissions by 34 percent by 2025. The Zero-Emissions Vehicle (ZEV) program will act as the focused technology of the Advanced Clean Cars program by requiring manufacturers to produce increasing numbers of ZEVs and plug-in hybrid electric vehicles in 2018 to 2025 model years. The Clean Fuels Outlet regulation will ensure that fuels such as electricity and hydrogen are available to meet the fueling needs of the new advanced technology vehicles as they come to the market.

EO B-16-12. EO B-16-12 (2012) directs state entities under the governor's direction and control to support and facilitate development and distribution of ZEVs. This executive order also sets a long-term target of reaching 1.5 million ZEVs on California's roadways by 2025. On a statewide basis, EO B-16-12 also establishes a GHG emissions reduction target from the transportation sector equaling 80 percent less than 1990 levels by 2050. In furtherance of this executive order, the governor convened an Interagency Working Group on ZEVs that has published multiple reports regarding the progress made on the penetration of ZEVs in the statewide vehicle fleet.

AB 1236*.* AB 1236 (2015), as enacted in California's Planning and Zoning Law, requires local land use jurisdictions to approve applications for the installation of electric vehicle charging stations, as defined, through the issuance of specified permits unless there is substantial evidence in the record that the proposed installation would have a specific, adverse impact on public health or safety, and there is no feasible method to satisfactorily mitigate or avoid the specific, adverse impact. The bill provides for appeal of that decision to the planning commission. The bill required local land use jurisdictions with a population of 200,000 or more residents to adopt an ordinance, by September 30, 2016, to create an expedited and streamlined permitting process for electric vehicle charging stations. Prior to this statutory deadline, in August 2016, the County of Los Angeles Board of Supervisors adopted Ordinance No. 10437 (N.S.) adding a section to the Los Angeles County Code related to the expedited processing of electric-vehicle charging-station permits consistent with AB 1236.

SB 350*.* In 2015, SB 350, the Clean Energy and Pollution Reduction Act, was enacted into law. As one of its elements, SB 350 establishes a statewide policy for widespread electrification of the transportation sector, recognizing that such electrification is required for achievement of the state's 2030 and 2050 reduction targets (see Public Utilities Code Section 740.12).

Solid Waste

AB 939 and AB 341. In 1989, AB 939, known as the Integrated Waste Management Act (PRC Sections 40000 et seq.), was passed because of the increase in waste stream and decrease in landfill capacity. The statute established the California Integrated Waste Management Board, which oversees a disposal reporting system. AB 939 mandated a reduction of waste being disposed of, and jurisdictions were required to meet diversion goals of all solid waste through source reduction, recycling, and composting activities of 25 percent by 1995 and 50 percent by 2000.

AB 341 (2011) amended the California Integrated Waste Management Act of 1989 to include a provision declaring that it is the policy goal of the state that not less than 75 percent of solid waste generated be source-reduced, recycled, or composted by 2020, and annually thereafter. In addition, AB 341 required the California Department of Resources Recycling and Recovery (CalRecycle) to develop strategies to achieve the state's policy goal. CalRecycle has conducted multiple workshops and published documents that identify priority strategies that CalRecycle believes will assist the state in reaching the 75 percent goal by 2020.

Water

EO B-29-15. In response to the ongoing drought in California, EO B-29-15 (April 2015) set a goal of achieving a statewide reduction in potable urban water usage of 25 percent relative to water use in 2013. The term of the executive order extended through February 28, 2016, although many of the directives have since become permanent water-efficiency standards and requirements. The executive order includes specific directives that set strict limits on water usage in the state. In response to EO B-29-15, the California Department of Water Resources modified and adopted a revised version of the Model Water Efficient Landscape Ordinance that, among other changes, significantly increased the requirements for landscape water use efficiency and broadened its applicability to include new development projects with smaller landscape areas.

Other State Regulations and Goals

SB 97. SB 97 (Dutton) (August 2007) directed the Governor's Office of Planning and Research to develop guidelines under CEQA for the mitigation of GHG emissions. In 2008, the Office of Planning and Research (OPR) issued a technical advisory as interim guidance regarding the analysis of GHG emissions in CEQA documents. The advisory indicated that the lead agency should identify and estimate a project's GHG emissions, including those associated with vehicular traffic, energy consumption, water usage, and construction activities (OPR 2008). The advisory further recommended that the lead agency determine significance of the impacts and impose all mitigation measures necessary to reduce GHG emissions to a level that is less than significant. The California Natural Resources Agency adopted the CEQA Guidelines amendments in December 2009, which became effective in March 2010.

Under the amended CEQA Guidelines in the CCR, a lead agency has the discretion to determine whether to use a quantitative or qualitative analysis, or apply performance standards to determine the significance of GHG emissions resulting from a particular project (14 CCR 15064.4[a]). The CEQA Guidelines require a lead agency to consider the extent to which a project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]). The CEQA Guidelines also allow a lead agency to consider feasible means of mitigating the significant effects of GHG emissions, including reductions in emissions through implementation of project features or off-site measures. The adopted amendments do not establish a GHG emissions threshold, but allow a lead agency to develop, adopt, and apply its own thresholds of significance or those developed by other agencies or experts. The California Natural Resources Agency also acknowledges that a lead agency may consider compliance with regulations or requirements implementing AB 32 in determining the significance of a project's GHG emissions (CNRA 2009a).

With respect to GHG emissions, the CEQA Guidelines state in CCR Section 15064.4(a) that lead agencies should "make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions. The CEQA Guidelines note that an agency may identify emissions by either selecting a "model or methodology" to quantify the emissions, or by relying on "qualitative analysis or other performance based standards" (14 CCR 15064.4[a]). Section 15064.4(b) states that the lead agency should consider the following when assessing the significance of impacts from GHG emissions on the environment: the extent a project may increase or reduce GHG emissions compared to the existing environmental setting; whether project emissions exceed a threshold of significance that the lead agency determines applies to the project; and the extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4[b]).

EO S-13-08. EO S-13-08 (November 2008) is intended to hasten California's response to the impacts of global climate change, particularly sea-level rise. Therefore, the executive order directs state agencies to take specified actions to assess and plan for such impacts. The final 2009 California Climate Adaptation Strategy report was issued in December 2009 (CNRA 2009a), and an update, Safeguarding California: Reducing Climate Risk, followed in July 2014 (CNRA 2014). To assess the state's vulnerability to climate change, the report summarizes key climate change impacts to the state for the following areas: agriculture, biodiversity and habitat, emergency management, energy, forestry, ocean and coastal ecosystems and resources, public health, transportation, and water. Issuance of the Safeguarding California: Implementation Action Plans followed in March 2016 (CNRA 2016). A draft of the Safeguarding California Plan: 2017 Update was prepared to communicate current and needed actions that state government should take to build climate change resiliency (CNRA 2017).

2015 State of the State Address. In January 2015, Governor Brown in his inaugural address and annual report to the Legislature established supplementary goals that would further reduce GHG emissions over the next 15 years. These goals include an increase in California's renewable energy portfolio from 33 percent to 50 percent, a reduction in vehicle petroleum use for cars and trucks by up to 50 percent, measures to double the efficiency of existing buildings, and measures to decrease emissions associated with heating fuels.

2016 State of the State Address. In his January 2016 address, Governor Brown established a statewide goal to bring per-capita GHG emissions down to 2 MT per person, which reflects the goal of the Global Climate Leadership Memorandum of Understanding (Under 2 Memorandum of Understanding) to limit global warming to less than 2°C by 2050. The Under 2 Memorandum of Understanding agreement pursues emission reductions of 80 percent to 95 percent below 1990 levels by 2050 and/or reach a per-capita annual emissions goal of less than 2 MT by 2050. A total of 187 jurisdictions representing 38 countries and 6 continents, including California, have signed or endorsed the Under 2 Memorandum of Understanding (Under 2 Coalition 2017).

CSULB Climate Action Plan

In December 2014, CSULBs Climate Action plan was released. The plan sets the path for the University to achieve the goal of carbon neutrality by the year 2030. The plan's emission reduction strategies are broken out into four categories (transportation, energy operation, and carbon offsets) that will advance the University's goals towards carbon neutrality in 2030. However, The CSULB's Climate Action Plan is not a qualified GHG reduction plan under CEQA Guidelines Section 15183.5 and thus it cannot be used in a cumulative impacts analysis to determine impact significance.

2.8.2.3 Local

Southern California Association of Governments

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SCAG serves as the federally designated MPO for the Southern California region and is the largest MPO in the United States. With respect to air quality planning, GHG emissions, and other regional issues, SCAG prepared the 2012 RTP. Specifically, the 2012 RTP/SCS links the goals of sustaining mobility with the goals of fostering economic development; enhancing the environment; reducing energy consumption; promoting transportation-friendly development patterns; and encouraging all residents affected by socioeconomic, geographic, and commercial limitations to be provided with fair access. Consistent with SB 375 direction, the 2012 and 2016 RTP/SCSs do not require that local general plans, specific plans, or zoning be consistent with SB 375 but provide incentives to governments and developers for achieving consistency.

2.8.3 Thresholds of Significance

The significance criteria used to evaluate the Project impacts associated with GHG emissions are based on Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.). According to Appendix G, a significant impact related to GHG emissions would occur if the project would:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

Global climate change is a cumulative impact; as such, an individual project's potential impact is measured through its incremental contribution of GHG emissions combined with the contribution of all other sources of GHGs.

The CEQA Guidelines do not prescribe specific methodologies for performing an assessment of project-specific GHG emissions, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009b).

The State of California has not adopted emission-based thresholds for GHG emissions under CEQA. The Office of Planning and Research Technical Advisory, *CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act Review*, states that "public agencies are encouraged but not required to adopt thresholds of significance for environmental impacts. Even in the absence of clearly defined thresholds for GHG emissions, the law requires that such emissions from CEQA projects must be disclosed and mitigated to the extent feasible whenever the lead agency determines that the project contributes to a significant, cumulative climate change impact" (OPR 2008). Further, the advisory document indicates that "in the absence of regulatory standards for GHG emissions or other scientific data to clearly define what constitutes a 'significant impact,' individual lead agencies may undertake a project-by-project analysis, consistent with available guidance and current CEQA practice" (OPR 2008). The CEQA Guidelines specify that "when adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7[c]).

To address the first threshold of significance identified in Appendix G of the CEQA Guidelines, this analysis uses the SCAQMD-recommended (not adopted) numeric CEQA significance thresholds for GHG emissions that it developed for lead agencies to use in assessing GHG impacts of residential and commercial development projects.

In October 2008, SCAQMD recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects as presented in its Interim CEQA GHG Significance Threshold (SCAQMD 2008). This guidance document, which builds on the previous guidance prepared by CAPCOA, explored various approaches for establishing a significance threshold for GHG emissions. The draft interim CEQA thresholds guidance document was not adopted or approved by the Governing Board. However, in December 2008, SCAQMD adopted an interim 10,000 MT CO_2e per year screening level threshold for stationary source/industrial projects for which SCAQMD is the lead agency (see SCAQMD Resolution No. 08-35, December 5, 2008).

SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. From December 2008 to September 2010, SCAQMD hosted working group meetings and revised the draft threshold proposal several times. The most recent proposal, issued in September 2010 (SCAQMD 2010), uses the following tiered approach to evaluate potential GHG impacts from various uses:

Tier 1 Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.

Tier 2 Consider whether or not the proposed project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.

Tier 3 Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO_2e per year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO_2e per year), commercial projects (1,400 MT CO_2e per year), and mixed-use projects (3,000 MT CO_2e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO_2e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.

Tier 4 Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of AB 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO_2e per service population for project level analyses and 6.6 MT CO_2e per service population for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.

Tier 5 Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

For purposes of this Addendum, the Project's GHG emissions are conservatively compared to the SCAQMD recommendation of a project-level screening threshold of 3,500 MT CO_2e per year for residential projects. Per the

SCAQMD guidance, construction emissions should be amortized over the operational life of the Project, which is assumed to be 30 years (SCAQMD 2008). Thus, this impact analysis compares estimated operational emissions plus amortized construction emissions to the recommended SCAQMD threshold of 3,500 MT CO_2e per year.

2.8.4 Impact Analysis

2.8.4.1 Generation of Greenhouse Gas Emissions

Construction Emissions

Construction of the Project would result in GHG emissions that would primarily be associated with the use of off-road construction equipment, on-road hauling and vendor trucks, and worker vehicles. As discussed previously, the SCAQMD *Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold* (2008) recommends that, “construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies.” Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 3,500 MT CO_2e per year. Therefore, the determination of significance is addressed in the operational emissions discussion following the estimated construction emissions.

To estimate Project GHG emissions, and based on information provided by CSULB, it is assumed that construction of the Project would begin in July 2019 and would last approximately 23 months, ending in May 2021. The analysis is based on the following assumptions (duration of phases is approximate):

- Demolition: 1 month (July 2019 – August 2019)
- Site Preparation: 2 Month (August 2019 – October 2019)
- Grading: 2 months (October 2019 – December 2019)
- Trenching: 2 months (December 2019 – January 2020)
- Building construction: 12 months (January 2020–January 2021)
- Paving: 1.5 months (January 2021 – February 2021)
- Architectural coating: 2 months (March 2021 – May 2021)

The site preparation phase would involve the removal of some existing pavement and over-excavation within building footprint. Soils would be removed, replaced, and compacted. No export of soil material is anticipated. The trenching phase would involve the trenching of soil for placement of necessary underground utilities, such as stormwater, domestic water, electrical lines, and data distribution. Building construction would involve the vertical construction of the proposed building and all interior work. The paving phase would include the pavement of asphalt surfaces. The architectural coating phase would involve the painting of the building. For the analysis, it was generally assumed that heavy construction equipment would be operating at the site 5 days per week (22 days a month) during Project construction. Construction worker estimates and vendor truck trips by construction phase were based on CalEEMod default values. Because no import or export of soils is anticipated, no haul truck trips were assumed. CalEEMod default trip length values were used for all construction-related trips.

The construction equipment mix and vehicle trips used for estimating the Project-generated construction emissions are shown in Table 10.

Table 10
Construction Scenario Assumptions

Construction Phase	One-Way Vehicle Trips			Equipment		
	Average Daily Worker Trips	*Average Daily Vendor Truck Trips*	*Total Haul Truck Trips*	*Equipment Type*	*Quantity*	*Usage Hours*
Demolition	14	0	18	Concrete/industrial saws	1	8
				Rubber tired dozers	1	8
				Tractors/Loaders/backhoes	3	8
Site preparation	8	0	0	Graders	1	8
				Rubber-tired dozers	1	7
				Tractors/loaders/backhoes	1	8
Grading	8			Grader	1	6
				Rubber tired dozers	1	6
				Tractors/loaders/backhoes	1	7
Trenching	14	0	0	Excavators	1	8
				Tractors/loaders/backhoes	2	8
				Trenchers	2	8
Building construction	174	26	0	Cranes	1	6
				Forklifts	1	6
				Generator sets	1	8
				Tractors/loaders/backhoes	1	6
				Welders	3	8
Paving	14	0	0	Cement and mortar mixers	1	6
				Pavers	1	6
				Paving equipment	1	8
				Rollers	1	7
				Tractors/loaders/backhoes	1	8
Architectural coating	36	0	0	Air compressors	1	6

Note: See Appendix D for details.

On-site sources of GHG emissions would include off-road equipment and off-site sources include trips from worker vehicles, vendor trucks, and haul trucks. Table 11 presents construction emissions for the Project in 2019, 2020, and 2021 from on-site and off-site emissions sources.

Table 11
Estimated Annual Construction GHG Emissions

Year	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
2019	114.21	0.03	0.00	115.01
2020	523.51	0.06	0.00	524.94
2021	49.03	0.01	0.00	49.22
Total	686.75	0.10	0.00	689.17
			Amortized construction emissions	**22.97**

Notes: GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent.
See Appendix D for complete results.

As shown in Table 11, the estimated total GHG emissions during construction would be approximately 115 MT CO_2e in 2019, 525 MT CO_2e in 2020 and 49 MT CO_2e in 2021. Estimated Project-generated construction emissions amortized over 30 years would be approximately 23 MT CO_2e per year. As with Project-generated construction criteria air pollutant emissions, GHG emissions generated during construction of the Project would be short term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. Because there is no separate GHG threshold for construction, the evaluation of significance is discussed in the operational emissions analysis in the following text.

Operational Emissions

Operation of the Project would include the use of the proposed 136,000-GSF residential building with 476 student beds. The bed spaces would consist of approximately 412 student beds in a mix of a total of 228 double- and single-occupancy bedrooms, 64 student beds in 16 four-bed suites, and a total of four 1- and 2-bedroom apartments for faculty and staff. Operation of the Project would generate GHG emissions through; landscape maintenance equipment operation; energy use (natural gas and generation of electricity consumed by the Project); solid waste disposal; and generation of electricity associated with water supply, treatment, and distribution, and wastewater treatment. However, regarding mobile source GHG emissions, the Project would result in a net decrease in vehicle trips over existing conditions. Therefore, no net new GHG emissions would be associated with mobile sources. Annual GHG emissions from the Project were estimated using CalEEMod, as discussed below.

CalEEMod was used to estimate GHG emissions from the Project's area sources, including operation of gasoline-powered landscape maintenance equipment, which was estimated using CalEEMod default values. Landscape equipment emissions would be minimal. Consumer product use and architectural coatings result in little to no GHG emissions. The estimation of operational energy emissions was based on CalEEMod land use defaults and total area (i.e., square footage) of the Project's land uses and energy use information provided by CSULB. The energy use from residential land uses is calculated in CalEEMod based on the California residential End-Use Survey database. Emissions are calculated by multiplying the energy use by the utility carbon intensity (pounds of GHGs per kilowatt-hour for electricity or 1,000 British thermal units for natural gas) for CO_2 and other GHGs (CAPCOA 2017).

CalEEMod default energy intensity factors (CO_2, CH_4, and N_2O mass emissions per kWh) for SCE are based on the value for SCE's energy mix in 2012. As explained in Section 2.8.2, *Relevant Plans, Policies, and Ordinances*, the RPS imposes a target of 33 percent from renewable energy sources for all electricity providers in California by 2020 and 60% by 2030. The CO_2 emissions intensity factor for utility energy use in CalEEMod was adjusted consistent with SCE's 2017 Power Content Label, which reported that 29 percent of the power mix was generated by eligible renewable sources (SCE 2018). Because SCE is required to meet the 33 percent RPS by December 31, 2020, the CO_2 emissions intensity factor is anticipated to be less than assumed in CalEEMod at Project operation (2021), which would reflect the increase in percentage of renewable energy in SCE's energy portfolio. As such, GHG emissions from operational energy consumption likely would be lower than reported in this section.

The Project's net trip generation based on the rates developed in the Campus Master Plan Update EIR and commuter reduction and the freshman vehicle policy discussed in Section 1.3.6, *Access and Parking*, would be less than zero. Therefore, for the purposes of estimating GHG emissions, the Project would not generate any new vehicle trips or mobile source emissions.

The Project would generate solid waste, and therefore, result in CO_2e emissions associated with landfill off-gassing. CalEEMod default values for solid waste generation were used to estimate GHG emissions associated with solid waste. Project compliance with statewide solid waste diversion goals would reduce project-generated GHG emissions associated with solid waste disposal.

Supply, conveyance, treatment, and distribution of water for the Project would require the use of electricity, which would result in associated indirect GHG emissions. Similarly, wastewater generated by the Project would require the use of electricity for conveyance and treatment, along with GHG emissions generated during wastewater treatment. Information provided by CSULB regarding the Project's anticipated water use was utilized for estimating water consumption estimates for indoor water use. CalEEMod defaults were utilized for outdoor water use, and it was assumed that wastewater treatment would be 100 percent aerobic.

The estimated operational GHG emissions from Project area sources, energy consumption, motor vehicles, solid waste, water consumption, and wastewater treatment associated with the Project at full buildout in 2021 are shown in Table 12. Details of the emissions calculations are provided in Appendix D.

Table 12
Estimated Annual Operational GHG Emissions

Emission Source	CO_2	CH_4	N_2O	CO_2e
	Metric Tons per Year			
Area	4.08	0.00	0.00	4.17
Energy	470.34	0.02	0.01	472.63
Mobile	0.00	0.00	0.00	0.00
Solid waste	22.60	1.33	0.00	55.98
Water supply and wastewater	45.02	0.13	0.00	49.40
Total	**542.04**	**1.49**	**0.01**	**582.19**
Amortized construction emissions				*22.97*
Operation + amortized construction total				**605.16**
SCAQMD threshold				3,500
Threshold exceeded?				**No**

GHG = greenhouse gas; CO_2 = carbon dioxide; CH_4 = methane; N_2O = nitrous oxide; CO_2e = carbon dioxide equivalent; SCAQMD = South Coast Air Quality Management District.
See Appendix D for detailed results.

As shown in Table 12, estimated annual Project-generated operational emissions in 2021 plus amortized Project construction emissions would be approximately 605 MT CO_2e per year. The Project would not exceed the proposed SCAQMD threshold of 3,500 MT CO_2e for all non-industrial sources. Therefore, the Project's GHG contribution would be not cumulatively considerable and the impact is less than significant. No new impacts related to greenhouse gas emissions would occur with implementation of the Project.

2.8.4.2 Conflicts with Applicable Plans for Reducing GHG Emissions

Consistency with the SCAG's 2016–2040 Regional Transportation Plan

SCAG's 2016 RTP/SCS is a regional growth-management strategy that targets per-capita GHG reduction from passenger vehicles and light-duty trucks in the Southern California region. The 2016 RTP/SCS incorporates local land use projections and circulation networks in city and county general plans. The 2016 RTP/SCS reaffirms the land use policies that were incorporated into the 2012 RTP/SCS. These foundational policies, which guided the development of the 2016 RTP/SCS's strategies for land use, include the following:

- Identify regional strategic areas for infill and investment;
- Structure the plan on a three-tiered system of centers development;[12]
- Develop "Complete Communities";
- Develop nodes on a corridor;
- Plan for additional housing and jobs near transit;
- Plan for changing demand in types of housing;
- Continue to protect stable, existing single-family areas;
- Ensure adequate access to open space and preservation of habitat; and
- Incorporate local input and feedback on future growth.

The 2016 RTP/SCS recognizes that transportation investments and future land use patterns are inextricably linked, and continued recognition of this close relationship will help the region make choices that sustain existing resources and expand efficiency, mobility, and accessibility for people across the region. In particular, the 2016 RTP/SCS draws a closer connection between where people live and work, and it offers a blueprint for how Southern California can grow more sustainably. The 2016 RTP/SCS also includes strategies focused on compact infill development and economic growth by building the infrastructure the region needs to promote the smooth flow of goods and easier access to jobs, services, educational facilities, healthcare, and more.

The 2016 RTP/SCS indicates the SCAG region was home to about 18.3 million people in 2012 and currently includes approximately 5.9 million homes and 7.4 million jobs.[13] By 2040, the integrated growth forecast projects that these figures will increase by 3.8 million people, with nearly 1.5 million more homes and 2.4 million more jobs (SCAG 2016a).

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[12] Complete language: "Identify strategic centers based on a three-tiered system of existing, planned, and potential, relative to transportation infrastructure. This strategy more effectively integrates land use planning and transportation investment." A more detailed description of these strategies and policies can be found on pp. 90–92 of the SCAG 2008 RTP, adopted in May 2008.
[13] The SCAG 2016 RTP/SCS is based on year 2012 demographic data with growth forecasts developed for 2020, 2035, and 2040.

The 2016 RTP/SCS is expected to reduce per-capita transportation emissions by 8 percent by 2020 and 18 percent by 2035. Furthermore, although there are no per-capita GHG emission reduction targets for passenger vehicles set by CARB for 2040, the 2016 RTP/SCS's GHG emission reduction trajectory shows that more aggressive GHG emission reductions are projected for 2040 (SCAG 2016b). The 2016 RTP/SCS would result in an estimated 21-percent decrease in per-capita GHG emissions by 2040. By meeting and exceeding the then applicable SB 375 targets for 2020 and 2035, as well as achieving an approximately 21-percent decrease in per-capita GHG emissions by 2040 (an additional 3-percent reduction in the 5 years between 2035 [18 percent] and 2040 [21 percent]), the 2016 RTP/SCS was expected to fulfill and exceed its portion of SB 375 compliance with respect to meeting the state's GHG emission reduction goals.

In March 2018, CARB updated the SB 375 targets to require an 8-percent reduction by 2020 and a 19-percent reduction by 2035 in per capita passenger vehicle GHG emissions (CARB 2018b). As this reduction target was updated after publication of the 2016 RTP/SCS, it is expected that the next iteration of the RTP/SCS will be updated to include this target.

Typically, a project would be consistent with the RTP/SCS if the project does not exceed the underlying growth assumptions within the RTP/SCS. Because the Project is consistent with the University's Campus Master Plan, this Project would be consistent with the underlying assumptions within the RTP/SCS. In addition, the major goals of the 2016 RTP/SCS are outlined in Table 13, along with the Project's consistency with them.

Table 13
Project Consistency with the SCAG 2016 RTP/SCS

RTP/SCS Measure	Project Consistency
Preserve the Transportation System We Already Have	Does not apply. The Project would not inhibit SCAG from preserving the existing transportation system.
Expand Our Regional Transit System to Give People More Alternatives to Driving Alone	Does not apply. The Project would not inhibit SCAG from preserving expanding the regional transportation system.
Expand Passenger Rail	Does not apply. The Project would not inhibit SCAG from expanding the passenger rail system.
Improve Highway and Arterial Capacity	Does not apply. The Project would not inhibit SCAG from improving highway and arterial capacity.
Manage Demands on the Transportation System	Consistent. The project would reduce demand on the transportation system by converting commuter students to on-campus residential students.
Optimize the Performance of the Transportation System	Does not apply. The Project would not inhibit SCAG from optimizing the performance of the transportation system.
Promoting Walking, Biking and Other Forms of Active Transportation	Consistent The project's location places students in walking and biking distance of classes and support services on CSULB's campus.
Strengthen the Regional Transportation Network for Goods Movement	Does not apply. The Project would not inhibit SCAG from strengthening the regional transportation network for goods movement.
Leverage Technology	Does not apply. The Project would not inhibit SCAG from leveraging technology for the transportation system.
Improve Airport Access	Does not apply. The Project would not inhibit SCAG from improving airport access.

Table 13
Project Consistency with the SCAG 2016 RTP/SCS

RTP/SCS Measure	Project Consistency
Focus New Growth Around Transit	Consistent. The Project would build new residential structures near existing transit corridors.
Improve Air Quality and GHG	Inconsistent. While the Project would reduce vehicle emissions from the reduction of vehicle trips, the Project would result in criteria air pollutant and GHG emissions during construction and operation from energy, water, waste, and area sources.
Preserve Natural Lands	Consistent. The project would not impact natural lands during construction or operation.

Source: SCAG 2016a.

As shown in Table 13, the Project would not conflict with most of the goals within SCAG's 2016 RTP/SCS.

Consistency with CARB's Scoping Plan

As discussed in Section 2.8.2, *Relevant Plans, Policies, and Ordinances*, the Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.[14] Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., low-carbon fuel standards), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Table 14 highlights measures that have been, or will be, developed under the Scoping Plan and the Project's consistency with Scoping Plan measures. To the extent that these regulations are applicable to the Project, its inhabitants, or uses, the Project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law.

[14] The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009b).

Table 14
Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Transportation Sector		
Advanced Clean Cars	T-1	Consistent. The Project's students would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Low-Carbon Fuel Standard	T-2	Consistent. Motor vehicles driven by the Project's students would use compliant fuels.
Regional Transportation-Related GHG Targets	T-3	Not applicable. The Project would not prevent CARB from implementing this measure.
Advanced Clean Transit	Proposed	Not applicable. The Project would not prevent CARB from implementing this measure.
Last-Mile Delivery	Proposed	Not applicable. The Project would not prevent CARB from implementing this measure.
Reduction in VMT	Proposed	The project would reduce VMT by converting commuter students to on-campus residential students.
Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil 4. Solar-Reflective Automotive Paint and Window Glazing	T-4	Not applicable. The Project would not prevent CARB from implementing this measure.
Ship Electrification at Ports (Shore Power)	T-5	Not applicable. The Project would not prevent CARB from implementing this measure.
Goods Movement Efficiency Measures 1. Port Drayage Trucks 2. Transport Refrigeration Units Cold Storage Prohibition 3. Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification 4. Goods Movement System-wide Efficiency Improvements 5. Commercial Harbor Craft Maintenance and Design Efficiency 6. Clean Ships 7. Vessel Speed Reduction	T-6	Not applicable. The Project would not prevent CARB from implementing this measure.
Heavy-Duty Vehicle GHG Emission Reduction • Tractor-Trailer GHG Regulation • Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)	T-7	Not applicable. The Project would not prevent CARB from implementing this measure.

Table 14
Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive Proposed Project	T-8	Not applicable. The Project would not prevent CARB from implementing this measure.
Medium and Heavy-Duty GHG Phase 2	Proposed	Not applicable. The Project would not prevent CARB from implementing this measure.
High-Speed Rail	T-9	Not applicable. The Project would not prevent CARB from implementing this measure.
Electricity and Natural Gas Sector		
Energy Efficiency Measures (Electricity)	E-1	Consistent. The Project will comply with energy-efficiency standards for electrical appliances and other devices in Title 24, Part 6, of the California Code of Regulations in effect at the time of building construction.
Energy Efficiency (Natural Gas)	CR-1	Not applicable. The Project would not prevent CARB from implementing this measure.
Solar Water Heating (California Solar Initiative Thermal Program)	CR-2	Not applicable. The Project would not prevent CARB from implementing this measure.
Combined Heat and Power	E-2	Not applicable. The Project would not prevent CARB from implementing this measure.
Renewable Portfolios Standard (33% by 2020)	E-3	Not applicable. The electricity used by the Project will benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
Renewable Portfolios Standard (50% by 2050)	Proposed	Not applicable. The Project would not prevent CARB from implementing this measure.
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	Not applicable. The Project would not prevent CARB from implementing this measure.
Water Sector		
Water Use Efficiency	W-1	Consistent. The Project would include water efficient landscaping and buildings would be LEED Certified.
Water Recycling	W-2	Not applicable. The Project would not prevent CARB from implementing this measure.
Water System Energy Efficiency	W-3	Not applicable. This is applicable for the transmission and treatment of water. The Project would not prevent CARB from implementing this measure.
Reuse Urban Runoff	W-4	Not applicable. The Project would not prevent CARB from implementing this measure.
Renewable Energy Production	W-5	Not applicable. Applicable for wastewater treatment systems. The Project would not prevent CARB from implementing this measure.

Table 14
Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Green Buildings		
1. State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	Consistent. The Project will be constructed in compliance with state green building standards in effect at the time of building construction.
2. Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	Consistent. The Project's building would meet green building standards in effect at the time of design and construction.
3. Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	Consistent. The Project will be constructed in compliance with green building standards in effect at the time of building construction.
4. Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	Not applicable. The Project would not prevent CARB from implementing this measure.
Industry Sector		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	Not applicable. The Project would not prevent CARB from implementing this measure.
Oil and Gas Extraction GHG Emission Reduction	I-2	Not applicable. The Project would not prevent CARB from implementing this measure.
Reduce GHG Emissions by 20% in Oil Refinery Sector	Proposed	Not applicable. The Project would not prevent CARB from implementing this measure.
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	Not applicable. The Project would not prevent CARB from implementing this measure.
Refinery Flare Recovery Process Improvements	I-4	Not applicable. The Project would not prevent CARB from implementing this measure.
Work with the local air districts to evaluate amendments to their existing leak detection and repair rules for industrial facilities to include methane leaks	I-5	Not applicable. The Project would not prevent CARB from implementing this measure.
Recycling and Waste Management Sector		
Landfill Methane Control Measure	RW-1	Not applicable. The Project would not prevent CARB from implementing this measure.
Increasing the Efficiency of Landfill Methane Capture	RW-2	Not applicable. The Project would not prevent CARB from implementing this measure.
Mandatory Commercial Recycling	RW-3	During both construction and operation of the Project, the Project would comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended. During construction, all wastes would be recycled to the maximum extent possible.

Table 14
Project Consistency with Scoping Plan Greenhouse Gas Emission Reduction Strategies

Scoping Plan Measure	Measure Number	Project Consistency
Increase Production and Markets for Compost and Other Organics	RW-3	Not applicable. The Project would not prevent CARB from implementing this measure.
Anaerobic/Aerobic Digestion	RW-3	Not applicable. The Project would not prevent CARB from implementing this measure.
Extended Producer Responsibility	RW-3	Not applicable. The Project would not prevent CARB from implementing this measure.
Environmentally Preferable Purchasing	RW-3	Not applicable. The Project would not prevent CARB from implementing this measure.
Forests Sector		
Sustainable Forest Target	F-1	Not applicable. The Project would not prevent CARB from implementing this measure.
High-GWP Gases Sector		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	Not applicable. The Project would not prevent CARB from implementing this measure.
SF_6 Limits in Non-Utility and Non-Semiconductor Applications	H-2	Not applicable. The Project would not prevent CARB from implementing this measure.
Reduction of Perfluorocarbons (PFCs in Semiconductor Manufacturing	H-3	Not applicable. The Project would not prevent CARB from implementing this measure.
Limit High GWP Use in Consumer Products	H-4	Not applicable. The Project would not prevent CARB from implementing this measure.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	Not applicable. The Project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	Not applicable. The Project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	Not applicable. The Project would not prevent CARB from implementing this measure.
SF_6 Leak Reduction Gas Insulated Switchgear	H-6	Not applicable. The Project would not prevent CARB from implementing this measure.
40% reduction in methane and hydrofluorocarbon (HFC) emissions	Proposed	Not applicable. The Project would not prevent CARB from implementing this measure.
50% reduction in black carbon emissions	Proposed	Not applicable. The Project would not prevent CARB from implementing this measure.
Agriculture Sector		
Methane Capture at Large Dairies	A-1	Not applicable. The Project would not prevent CARB from implementing this measure.

Source: CARB 2008 and CARB 2017.
Notes: CARB = California Air Resources Board; CCR = California Code of Regulations; GHG = greenhouse gas; GWP = global warming potential; SB = Senate Bill; SF_6 = sulfur hexafluoride

Based on the analysis in Table 14, the Project would be consistent with the applicable strategies and measures in the Scoping Plan.

The Project would not impede the attainment of the GHG reduction goals for 2030 or 2050 identified in EO S-03-05 and SB 32, or the carbon neutrality goal for 2045 identified in EO B-55-18. EO S-03-05 establishes the following goals: GHG emissions should be reduced to 2000 levels by 2010, to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. SB 32 establishes for a statewide GHG emissions reduction target whereby CARB, in adopting rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emissions reductions, shall ensure that statewide GHG emissions are reduced to at least 40 percent below 1990 levels by December 31, 2030. EO B-55-18 establishes an additional statewide policy goal to achieve carbon neutrality as soon as possible and no later than 2045 and to achieve and maintain net negative emissions thereafter.

In November 2018, CARB published the 2018 Progress Report that analyzes the progress made toward meeting the regional SB 375 GHG emissions reduction targets. The report finds that “California is not on track to meet GHG reductions expected under SB 375” (CARB 2018a). It notes that while the state has hit its 2020 target ahead of schedule due to improvements in the energy sector, “meeting future targets will require a greater contribution from the transportation sector” (CARB 2018a). CARB recommends reducing the growth of single-occupancy vehicle travel to achieve California’s 2030 emissions target. The Project would help reduce the use of single-occupancy vehicle travel by locating students on campus in walking and biking distances of their classes and campus support services.

In addition, because the specific path to compliance for the state with regard to long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the Project would be speculative and cannot be identified at this time. The Project’s consistency with the Scoping Plan would assist in meeting the University’s contribution to GHG emission reduction targets in California. With respect to future GHG targets under SB 32 and EO S-3-05, CARB has also made clear its legal interpretation that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32’s 40% reduction target by 2030 and EO S-3-05’s 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets. Based on the above considerations, the Project would not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and this impact would be less than significant. No new impacts related to conflicts GHG reduction plans would occur with implementation of the Project.

2.9 Hazards and Hazardous Materials

The Master Plan’s potential impacts related to hazards and hazardous materials were analyzed in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR). The campus is located outside of the airport influence area for Long Beach Municipal Airport and is not located near any wildlands. Impacts related to on-site use of small amounts of hazardous materials consisting of janitorial cleaners and landscaping chemicals, as well as laboratory materials, were found to be less than significant with adherence to established University procedures that comply with existing federal and state regulations.

The Project would also include the use of small amounts of janitorial cleaners and landscape chemical, which would also be handled in accordance with established University procedures. Neither the Project site nor surrounding properties are located on the Cortese List compiled pursuant to Government Code Section 65962.5. No new or more severe impacts related to hazards and hazardous materials would occur with Project implementation.

2.10 Hydrology and Water Quality

Water quality was discussed in Section 3.6 of the Campus Master Plan Update EIR. The Master Plan would result in an increase in impervious surface area on the campus. However, impacts related to water quality were found to be less than significant, as the campus would implement stormwater drainage improvements and comply with all applicable regulations for stormwater runoff, which would be incorporated into the final site plan for each individual facility on the campus, as development proceeds under the Master Plan.

The Project would include stormwater drainage improvements and would be subject to applicable regulations governing hydrology and water quality. Because the Project would disturb greater than 1 acre of soil, a NOI and SWPPP would be required to be prepared prior to commencement of construction pursuant to the NPDES Construction General Permit for the State of California. The site is located within the Federal Emergency Management Agency (FEMA) Flood Zone X, which is not a Special Flood Hazard Area. As described in Section 1.3, *Housing Expansion Phase I – Parkside North Housing Project* Description, above, the Project would include bioswales and materials that facilitate water infiltration. As such, no new or more severe impacts than those described in the Campus Master Plan Update EIR related to hydrology and water quality would occur with Project implementation.

2.11 Land Use and Planning

The Master Plan's potential impacts related to land use and planning were analyzed in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR). As discussed in the Initial Study, the Master Plan would continue the existing University uses of the campus, and all proposed facilities and improvements are located within the campus and, therefore, would not physically divide an established community. No natural community or habitat conservation plans are applicable to the campus.

The Project is consistent with the housing use proposed for the Project site in the Master Plan. The Project would be constructed entirely on CSULB property and therefore would be under the land use jurisdiction of the CSU BOT. There are no local ordinances or policies of the City of Long Beach that would apply to projects on the CSULB campus, as the City does not have jurisdiction over CSU lands. Nevertheless, the Project does not propose a change in land use on the site, and is consistent with the City of Long Beach's Institutional zoning district and General Plan land use designation of Institutions/Schools. See Section 2.1, *Aesthetics*, for additional information about the Project's consistency with the City's Institutional zoning district. Additionally, neither the site nor campus is located within the airport influence area in the Long Beach Municipal Airport Land Use Compatibility Plan. Therefore, no new or more severe impacts related to land use and planning would occur with Project implementation.

2.12 Mineral Resources

As described in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR), the campus is not known to contain any important mineral resources. Therefore, no impact to mineral resources would occur with either the Master Plan or the Project.

2.13 Noise

The Campus Master Plan Update EIR analyzed the potential for buildout of the Master Plan to have long-term noise impacts in Section 3.3. The EIR found that Master Plan buildout would have less-than-significant contributions related to traffic noise and other campus activity, and that intermittent noise from athletic events would be less than significant with implementation of design and conduct measures. Design and conduct measures related to noise from athletic events would not be applicable to the Project since the Project would not include athletic events.

Temporary construction-period noise and vibration effects on sensitive receptors near the campus were evaluated in Section 3.9 of the Campus Master Plan Update EIR and were found to be significant and unavoidable at particular locations. Mitigation measures related to construction noise were identified in the Campus Master Plan Update EIR, including use of muffled construction equipment, maintenance of equipment in good working condition with noise-suppression features, locating noisy construction equipment as far from sensitive receptors as possible, adhering to the City of Long Beach's regulations for construction hours, and measures to limit noise affecting sensitive receptors, which could include timing of construction or erecting temporary sounds barriers, etc. These mitigation measures would be applicable to the Project.

The dominant noise source in the vicinity of the Project site is traffic on East Atherton Street. Single-family residential areas located across East Atherton Street to the north of the Project site are noise-sensitive uses, approximately 90 feet north of the Project site. The Project would not result in an increase in enrollment which could result in a permanent increase in traffic volumes and associated noise levels, and no athletic events which would generate noise such as cheering, public address (PA) system, whistles, etc., would be included in the Project. Exterior spaces proposed as part of the Project would include a courtyard and covered outdoor space on the ground level, as well as a rooftop terrace. The courtyard and ground-floor exterior space would include a play surface, games such as ping pong and pool, and seating areas, which would generate intermittent noise from students playing, conversations, etc. These uses would be similar to the central courtyard proposed on the Project site in the Campus Master Plan Update EIR and would not result in new or more severe operational noise impacts than those described in the Campus Master Plan EIR.

Construction of the Project would result in temporary increases in ambient noise levels at sensitive receptors near the Project site. Based on the analysis conducted in the Campus Master Plan EIR and EIR Appendix D, Noise Study, construction of housing on the Project site would not result in a significant impact as construction noise would not increase existing ambient noise levels 5 dB or more, which is the identified construction noise threshold. This construction noise impact conclusion is still accurate, based on an updated analysis to more accurately account for the distance from the Project site to the nearest residents on East Atherton Street, as shown in Table 15.

Table 15
Average Hourly Daytime Project Construction Noise Levels at Nearest Residential Uses

Estimated Average Noise Level at 50 Feet[1]	Attenuation due to Distance[2]	Usage Factor	Attenuation Due to Usage Factor	Attenuation for 6 Hours Per 8-Hour Work Day	Average Hourly Daytime Level	2006 Existing Average Hourly Daytime Ambient Level[3]	Estimated Increase in Average Hourly Daytime Level
75 dB(A)	-5.4 dB(A) (90 feet)	0.4	-4 dB(A)	-1 dB(A)	65 dB(A)	63 dB(A)	4 dB(A)
						Threshold	5 dB(A)
						Threshold exceeded?	**No**

Source: 2008 Campus Master Plan Update EIR, Appendix D Noise Study, as adapted for the Project.
Notes:
1. Equipment levels with feasible noise control using quieter procedures or machines and implementing noise control features requiring no major redesign or extreme costs.
2. Based on a reduction of 6 dB per doubling of distance.
3. Ambient noise measurements were not updated to current 2019 conditions, as 2006 ambient noise levels represent a conservative estimate of existing ambient noise levels.

Regardless of the above impact conclusion, the Project would be required to adhere to the mitigation measures related to construction noise that were identified in the Campus Master Plan Update EIR and summarized above. No new or more severe noise and vibration impacts beyond those described in the Campus Master Plan Update EIR would occur from Project construction activities.

2.14 Population and Housing

Potential impacts of the Master Plan on population and housing were discussed in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR). The Initial Study determined that the Master Plan would accommodate a projected gradual increase in student enrollment resulting from growth and development within the region, but would not, by itself, induce substantial population growth. Furthermore, the Master Plan would not displace people or housing as it would provide additional on-campus housing opportunities.

The Project would not support an increase in campus enrollment above current levels, as described in Section 1.3.9, *Project Operations*, which are less than those contemplated in the Campus Master Plan Update EIR. Therefore, no new or more severe impacts related to population and housing would occur with implementation of the Project.

2.15 Public Services

The Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR) concluded that the Master Plan would have no impact on schools, parks, and other public facilities, as adequate services would be provided on campus to support the campus population. Potential effects of Master Plan buildout on fire and police protection services were evaluated in Section 3.4 of the Campus Master Plan Update EIR. The EIR determined that the incremental increase in demand for fire and police protection resulting from gradual growth in student enrollment on campus would be less than significant and would not require mitigation.

The Project would not support an increase in campus enrollment beyond current levels, as described in Section 1.3.9, *Project Operations*, which are less than those contemplated in the Campus Master Plan Update EIR. Therefore, no new or more severe impacts on fire and police protection services would occur with Project implementation.

2.16 Recreation

Potential effects on recreation resulting from implementation of the Master Plan were analyzed in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR). As the Master Plan includes preservation and enhancement of on-campus open space and recreational facilities, the Initial Study concluded that the Master Plan would not result in impacts on off-campus parks and recreational facilities.

The Project would include open space to support the proposed residential use on the Project site, similar to that envisioned in the Master Plan. No new or more severe impacts on recreational facilities would occur with Project implementation.

2.17 Transportation

The Campus Master Plan Update EIR analyzed the potential for buildout of the Master Plan to affect traffic, circulation, and parking in Section 3.1. The EIR found that Master Plan buildout would result in significant and unavoidable impacts on the levels of service (LOS) for the Bellflower Boulevard/Stearns Street and Bellflower Boulevard/7th Street intersections, and a segment of the I-405 freeway between Bellflower Boulevard and Lakewood Avenue. All Master Plan impacts related to internal circulation, parking, transit, and pedestrian/bicycle transportation were determined to be less than significant.

Construction-period traffic/circulation impacts were analyzed in Section 3.9 of the Campus Master Plan Update EIR and were found to be less than significant with the implementation of mitigation measures, including employment of a flag person to direct traffic during construction at various campus entrances including along East Atherton Street; use of City-designated truck routes and avoiding travel of construction trucks through residential areas; avoidance of peak travel times to the extent feasible on I-405, I-607, and SR-22; provision of alternative bicycle/pedestrian routes on campus if needed, and temporary relocation of bus stops or other on-campus transit facilities if they are obstructed by construction. These mitigation measures would be applicable to the Project.

The Project would not result in any changes to the roadway network or internal vehicle, bicycle, or pedestrian circulation. The Master Plan would result in an overall net increase of over 2,000 parking spaces on campus, which the Project would not appreciably change. During construction, temporary road closures on Earl Warren Drive, which is part of the campus' internal roadway system, would be required to construct utility improvements; however, East Atherton Street located immediately adjacent to the campus would remain open. Temporary construction-period transportation-related impacts would comply with the mitigation measures described above and identified in the Campus Master Plan Update EIR and would, therefore, be less than significant.

Senate Bill 743 and related 2018 updates to the CEQA Guidelines in Section 15064.3 specify that VMT, the amount and distance of automobile travel due to a project, is the most appropriate measure of transportation impacts. The CEQA Guidelines changes also indicate that a project's effect on automobile delay shall not constitute a significant environmental impact, except possibly when analyzing a transportation project. Given that, an updated project-level analysis to assess LOS was not conducted for the Project. However, an assessment of VMT was conducted in accordance with the 2019 CSU Transportation Impact Study Manual (TISM), which provides procedures for screening out projects from detailed VMT analysis and for conducting detailed analysis, if a project is not screened out. Based on the TISM, the following projects are screened out from having to do detailed VMT analysis, as they either reduce VMT or result in a very minimal increase in VMT:

- Local-serving retail that is less than 50,000 square feet, or retail that is located wholly within the core of a CSU campus;
- Childcare centers that serve students, faculty, and staff families;
- Student services facilities;
- Parking facilities that serve the campus demand and do not create "too much parking;"
- Healthcare centers serving students, faculty, and staff;
- Recreation/fitness/wellness centers that serve students, faculty, and staff; and
- Projects generating less than 110 vehicle trips per day, as noted in the OPR Technical Advisory.

The Project would constitute on-campus housing serving primarily students. Table 16 shows vehicle trip generation associated with the Project. Based on the vehicle trip rates developed in or derived from Appendix D of the Campus Master Plan Update EIR—the Traffic Impact Study prepared by Fehr & Peers—and campus policy that restricts first-year students from bringing cars onto campus, the Project would not result in net increase in vehicle trip generation. As shown in Table 16, the Project would result in a net decrease of 330 daily vehicle trips to the campus over existing conditions. Additionally, with a net increase in two parking spaces, the Project would result in a negligible change in on-campus parking (i.e., not create "too much parking"). Given the above, the Project would be screened out from having to conducted detailed VMT analysis and the VMT impact would be less than significant.

Table 16
Project Vehicle Trip Generation

Land Use	Trip Rate Category	Size	Trip Rates	Daily Trips
Student				
CSULB FTE Student[1]	University/College	0	2.38	0.00
CSULB Commuter Student Reduction	University/College	-476	1.19	-566.44
CSULB Student Housing	Student Beds	476	2.16 + 80% reduction[2]	205.63
Subtotal	–	–	–	*-360.81*
Faculty/Staff				
CSULB FTE Staff (New Staff)	University/College	5	1.19	5.95
CSULB Commuter Faculty or Staff Reduction	University/College	-8	1.19	-9.52
CSULB Faculty or Staff Housing[3]	Faculty Beds	8	4.32	34.56
Subtotal	–	–		*30.99*
Total Trip Generation	**–**	**–**	**–**	**-329.82**

Source: Traffic Impact Study for the CSULB Master Plan, Fehr & Peers, October 2007
Notes:

1. The FTE Student rate includes students, faculty, staff, and visitors. The traffic study assumed that the ITE rates comprise 50% Students and 50% Faculty/Staff. Therefore, a rate for faculty/staff alone can be derived from the student rate by taking 50% of 2.38 or 1.19 daily trips per FTE Faculty/Staff.
2. Based on EIR Addendum Project Description, "most residents would be first-year students and, per campus policy, first-year students are not allowed to bring cars onto campus." Specifically, first-year students would be housed in the 412 "pod beds," which is 87% of the total 476 student beds. Rounded down to 80% to be conservative.
3. There are no published trip rates for university faculty/staff housing; therefore, the Faculty and Staff Housing rate is based on a doubling of the Student Housing rate.

Given the above, no new or more severe impacts related to transportation would occur with implementation of the Project.

2.18 Tribal Cultural Resources

While the Campus Master Plan Update EIR was completed before the passage of AB 52, tribal cultural resources were discussed in Section 3.7 of the EIR, as further discussed below. AB 52 requires that California lead agencies consult with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of a proposed project, if so requested by the tribe. AB 52 also specifies that a project with an effect that may cause a substantial adverse change in the significant of a tribal cultural resource is a project that may have a significant effect on the environment and resulted in the addition of a new Tribal Cultural Resources section to the CEQA Guidelines. Defined in Section 21074(a) of the Public Resources Code, a tribal cultural resource is a site, feature, place, cultural landscape, sacred place, or object, which is of cultural value to a California Native American tribe *and* is either listed in or eligible for listing in the California Register of Historical Resources (CRHR) or a local historic register, or the lead agency determines that the resource is eligible for such listing.

Section 3.7 of the Campus Master Plan Update EIR summarizes CSULB's Policy on Native American Burial remains. The policy was developed through consultation with the local Native American community regarding construction projects and archaeological excavation. The policy applies to Native American burial remains, associated and unassociated funerary objects, sacred objects, and other cultural patrimony. Compliance with the policy is overseen by a CSULB committee on Native American Burial Remains and Cultural Patrimony, including CSULB's Director (or designee) of American Indian Studies; Two probationary or tenured CSULB faculty specializing in archaeology, biological anthropology, or cultural anthropology (or the most close related specializations available); Two additional probationary or tenured CSULB faculty (at least 1 of whom shall be of Native American heritage); Five representatives recommended by tribal authorities of Native American communities whose heritage is closely associated geographically with the counties of Los Angeles and Orange; and CSULB's Vice President (or designee) for Academic Affairs.

CSULB's Policy on Native American burial remains, associated and unassociated funerary objects, sacred objects, and other cultural patrimony includes the following procedures:

a) Prior to commencement of ground disturbing construction activities or archaeological work CSULB will confer with the Committee's Native American consultants.
b) The sensitivity of the proposed project area will be discusses and recommendation for monitoring and the treatment of unanticipated discoveries will be determined.
c) CSULB personnel may make recommendation regarding laboratory study of Native American burial remains or associated materials, should they be encountered. These recommendations should be considered by the appropriate tribal representative.

As part of the Archaeological and Paleontological Resources Assessment prepared for the Project (see Appendix B), a search of the SLF from the NAHC was conducted. A response letter was received via email from the NAHC on March 14, 2019, stating that the results of the SLF search indicated that the Project site and surrounding area was sensitive for the presence of Native American cultural resources. The NAHC also provided a list of five Native American groups and individuals who may have knowledge of cultural resources within the proposed Project site. Letters were sent to each of the five representatives on May 1, 2019. This coordination was conducted for informational purposes only and does not constitute formal government-to-government consultation. To date, one response has been received from the Gabrieleño Band of Mission Indians – Kizh Nation, Brandy Salas, admin specialist for the Gabrieleño Band of Mission Indians – Kizh Nation responded via email on May 1, 2019 stating that they would like consult directly with the lead agency for the Project. This response was forwarded to CSULB. See Appendix B for details on correspondence with Native American groups and individuals.

As described in Section 2.5, *Cultural Resources*, the Project site was initially developed between 1982 and 1994. However, the majority of the Project site is made up of open land, now covered by grasses and other ornamental vegetation, and does not appear to have ever been extensively developed. Additionally, this review indicated that there were several natural features, particularly an unnamed creek or tributary running through the area and a wetland to the south, present near the Project site, which would have provided important resources to prehistoric peoples. Forty of the 54 sites identified during the CHRIS records search are prehistoric or multicomponent sites, suggesting that prehistoric resources may be present in the areas within and surrounding the Project site. Therefore, there is a moderate to high sensitivity for prehistoric-era archaeological resources, including tribal cultural resources, within the Project site.

The mitigation measures identified in Section 3.7 of the Campus Master Plan Update EIR and listed in Appendix A of this Addendum include requirements for a Native American monitor during construction, and protocols for the treatment of archaeological resources and human remains, if discovered. Adherence with these mitigation measures would ensure that the Project would have less-than-significant impacts on tribal cultural resources. Therefore, no new or more severe impacts to tribal cultural resources would occur as a result of the Project.

2.19 Utilities and Service Systems

Section 3.5 of the Campus Master Plan Update EIR addressed potential impacts of the Master Plan on utilities and service systems. The analysis concluded that the Master Plan would not require the construction of new or expansion of existing water, wastewater, stormwater, or solid waste facilities and impacts would be less than significant. Water supply was discussed in Section 3.6 of the EIR. The EIR found that existing and projected water supplies would be sufficient to serve campus development pursuant to the Master Plan and impacts would be less than significant but, nevertheless, included mitigation measures related to water conservation, including use of reclaimed water for irrigation, low-water-use fixtures, and coordination with the Long Beach Water Department to reduce water use during water supply shortages.

The Project is consistent with the amount of growth analyzed in the Campus Master Plan Update EIR and would be similar to the project proposed for the Project site in the Campus Master Plan Update EIR. The mitigation measures related to water conservation would be applicable to the Project. The Project would also comply with mitigation measures related to the generation of solid waste during construction, including recycling of materials to the extent feasible. No new or more severe impacts related to utilities and service systems would occur.

2.20 Wildfire

Since the certification of the Campus Master Plan Update EIR, the CEQA Guidelines were updated to include a new section on wildfire. As described in the Initial Study prepared for the Campus Master Plan Update (see Appendix A of the Campus Master Plan Update EIR), the campus is not located in the vicinity of any wildlands and no impacts related to wildfire would occur. As such, neither the Master Plan nor the Project would result in impacts related to wildfire.

3 References and Preparers

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3.2 List of Preparers

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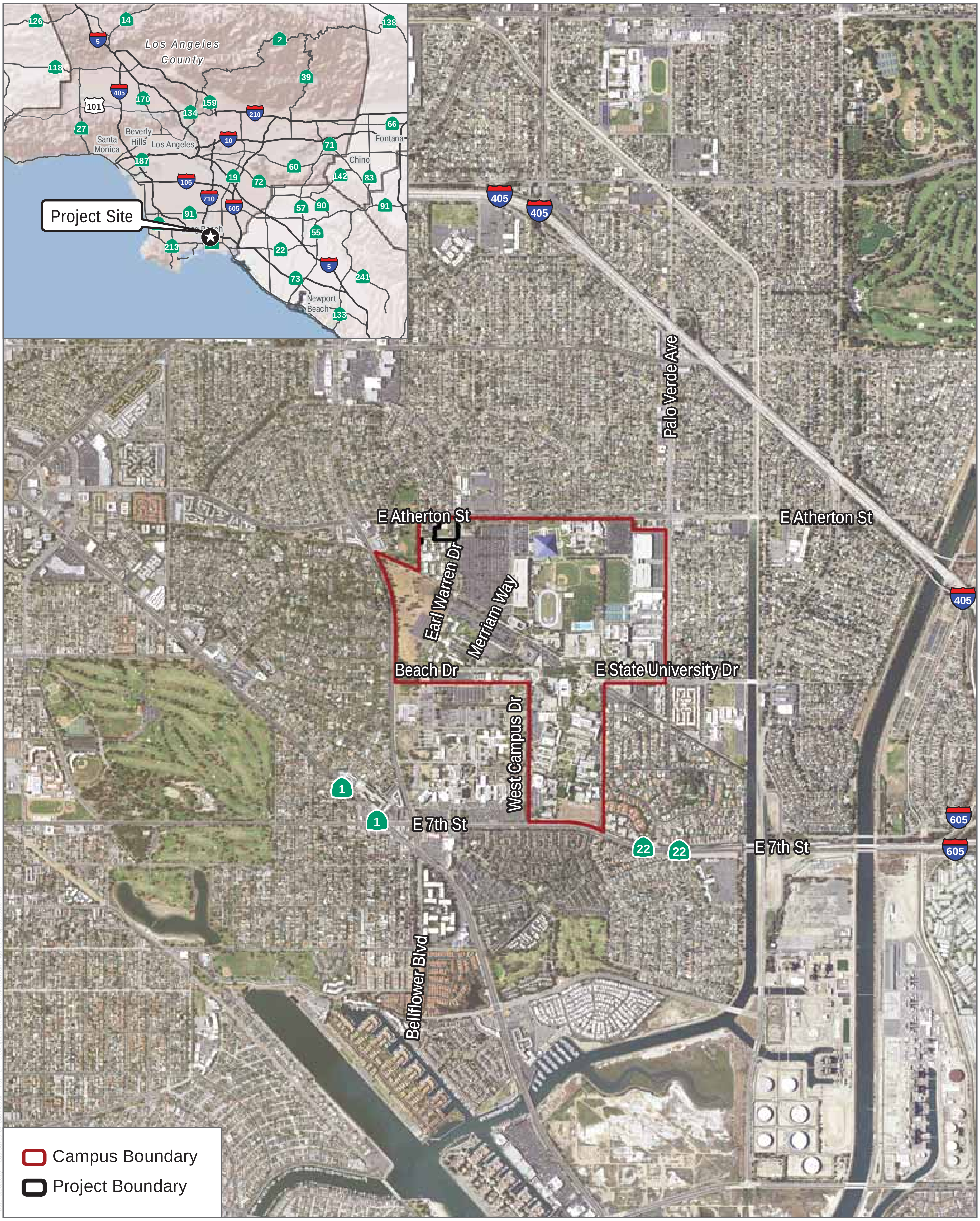

SOURCE: Bing Maps 2018

DUDEK

0 1,000 2,000 Feet

FIGURE 1

Project Location

Housing Expansion Phase I - Parkside North Housing Project

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SOURCE: Bing Maps 2018

DUDEK

0 100 200 Feet

FIGURE 2

Project Site

Housing Expansion Phase I - Parkside North Housing Project

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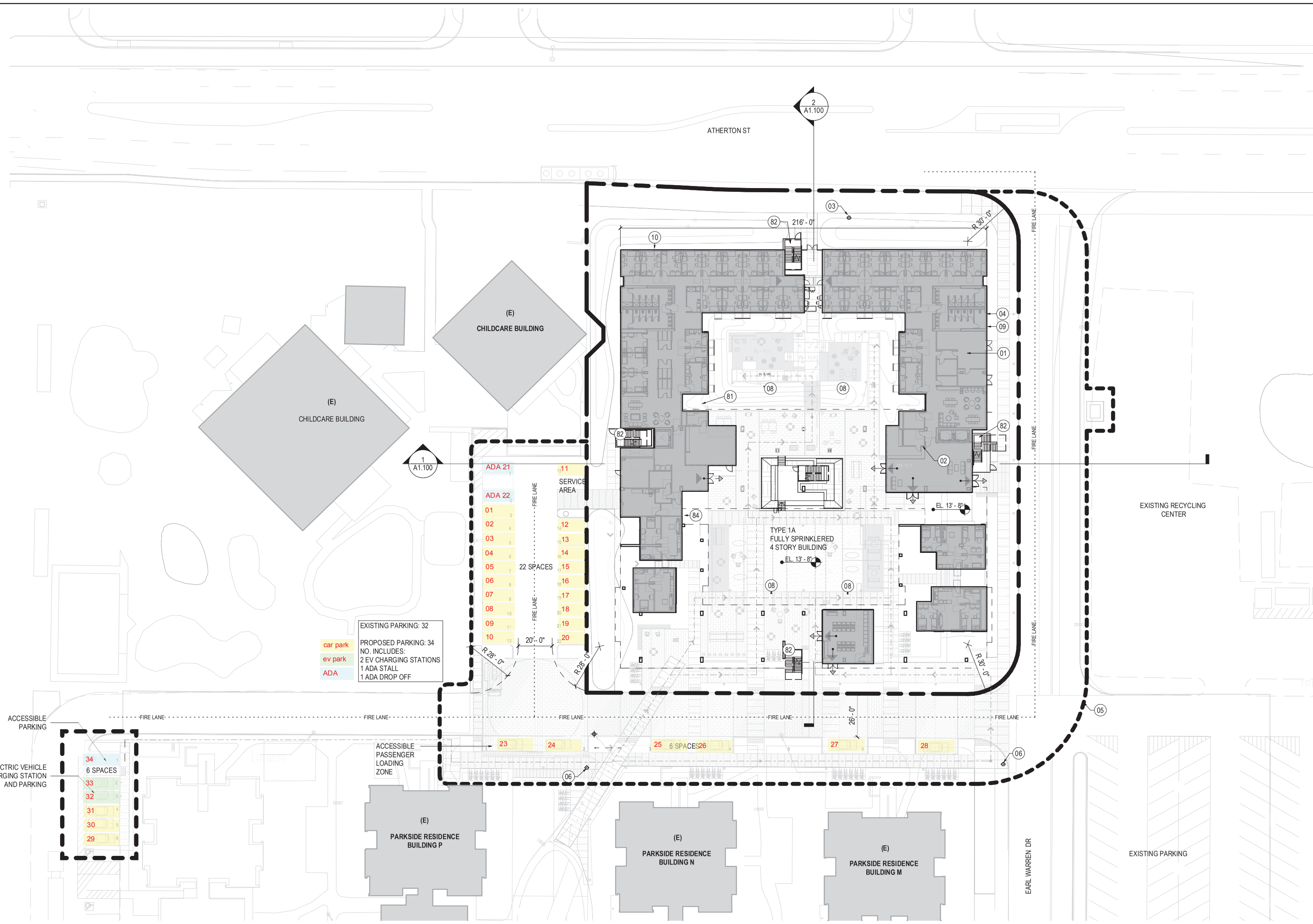

SHEET NOTES

01 FIRE ALARM CONTROL PANEL
02 FIRE ALARM ANNUCIATOR PANEL
03 PROPOSED FIRE HYDRANT
04 PROPOSED FDC
05 LIMIT OF WORK
06 EXISTING FIRE HYDRANT
08 STORM DRAIN
09 BACK FLOW PREVENTER (FIRE), REFER TO PLUMBING DRAWINGS
10 BACKFLOW PREVENTER (CW)
81 DRY STANDPIPE
82 FIRE STANDPIPE RISER IN EXIT STAIR
84 ROOF HATCH FOR ROOF CANOPY ACCESS

SITE LEGEND

PROPERTY LINE
FIRE LANE / FIRE ACCESS
PLANTING
POINT OF EXIT
LIMIT OF WORK
ACCESSIBLE ROUTE
ACCESSIBLE (MEANS OF EGRES EXIT DISCHARGE PATH
RED CURB

GENERAL NOTES

3 SITE PLAN _ HOUSING
SCALE: 1" = 30'-0"

SOURCE: Gensler 2019
Dudek 2019

DUDEK

FIGURE 3
Site Plan
Housing Expansion Phase I - Parkside North Housing Project

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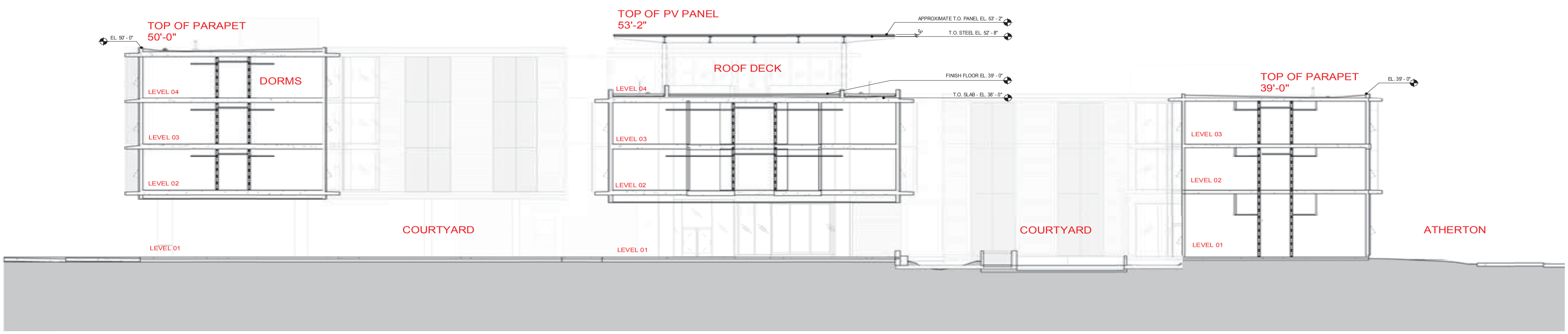

SOURCE: CSULB 2019

DUDEK

FIGURE 4

Elevations

Housing Expansion Phase I – Parkside North Housing Project

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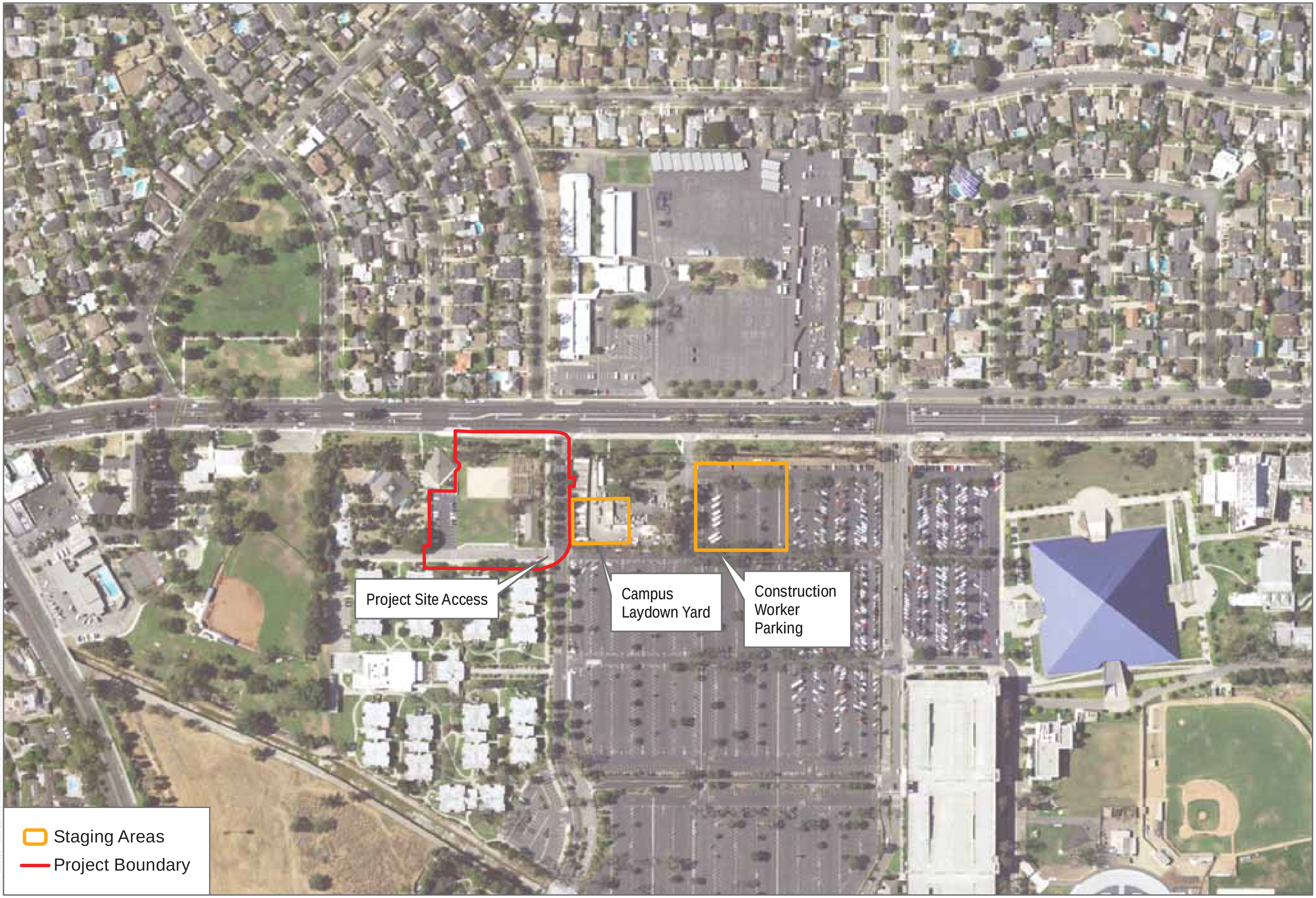

SOURCE: Bing Maps, 2018

DUDEK

FIGURE 5

Proposed Construction Staging Areas and Access

Housing Expansion Phase I - Parkside North Housing Project

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California State University, Long Beach

Campus Master Plan
Master Plan Enrollment: 31,000 FTE
Approval Date: January/February 1963
Revised Date: May 2008
Main Campus Acreage: 322

N

0 250' 500' 1000'

Buildings	Campus Boundary	Parking
EXISTING BUILDING	EXISTING	EXISTING LOT
FUTURE BUILDING	FUTURE	FUTURE LOT
TEMPORARY BUILDING		EXISTING STRUCTURE
EXISTING BUILDING NOT IN USE		FUTURE STRUCTURE

SOURCE: CSULB 2019

DUDEK

FIGURE 6A
Existing Master Plan

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California State University, **Long Beach**

Master Plan Enrollment: 31,000 FTE

Master Plan approved by the Board of Trustees: January 1963, February 1963

Master Plan Revision approved by the Board of Trustees: September 1965, June 1966, November 1970, January 1972, May 1972, March 1974, July 1976, September 1976, November 1978, March 1982, January 1984, November 1984, November 1985, July 1986, September 1988, November 1990, September 1991, September 1994, November 1994, July 2003, May 2008

1. E. James Brotman Hall
2. Student Health Services
3. Nursing
4. Soroptomist House
5. Family and Consumer Sciences
6. University Student Union
7. Cafeteria
8. Bookstore
9. Psychology
10. Liberal Arts 5
11. Liberal Arts 4
12. Liberal Arts 3
13. Liberal Arts 2
14. Liberal Arts 1
15. Faculty Office 3
16. Faculty Office 2
17. Lecture Hall 150-151
18. College of Liberal Arts Administration
19. Library
20. Academic Services
21. Multi-Media Center
22. Ellis Education Building
23. Education 2
24. McIntosh Humanities Office Building
25. Language Arts Building
26. Theatre Arts
27. University Theatre
28. University Telecommunication Center
29. Art Annex
32. Fine Arts 1
33. Fine Arts 2
34. Fine Arts 3
35. Fine Arts 4
36. Faculty Office 4
37. Peterson Hall 1
38. Student Success Center
39. Women's Softball/Soccer Locker Room
41. Microbiology
43. College of Continuing and Professional Education
44. Electrical Substation (North)
45. Faculty Office 5
46. Social Sciences / Public Affairs
47. Kinesiology
48. Health and Human Services Classrooms
49. Health and Human Services Offices
50. Vivian Engineering Center
51. Engineering 2
52. Engineering 3
53. Engineering 4
54. Design
55. Human Services and Design
56. Engineering Technology
57. Facilities Management
58. Corporation Yard
59. Patterson Child Development Center
60. Los Alamitos Hall
61. Los Cerritos Hall

62A-F. Hillside Residence Halls

62G-Q. Parkside Residence Halls

62R. Parkside Dining Hall

62U. Hillside Dining Hall

63. Recycling Center
64. Greenhouse 3
65. Electrical Substation (South)
66. Reprographics
67. Communications - Main Distribution Facility A
68. Restrooms / Storage
69. Softball Field Restrooms
70. Communications - Main Distribution Facility B
71. Bob Cole Conservatory of Music
72. Carpenter Performing Arts Center and Dance Center
73. Mike and Arline Walter Pyramid
74. Parking/Transportation Services
75. International House
76. Earl Burns Miller Garden
77. *Alumni Center*
78. Visitor Information Center
79. Communications - Main Distribution Facility C
80. University Police
81. Neil and Phyllis Barrett Athletic Administration Center
82. Outpost Food Service
83. Engineering/Computer Science
84. Steve and Nini Horn Center
85. College of Business
86. Central Plant
88. Parking Structure No. 1
89. Housing and Residential Life
91. Parking Structure No. 2
92. Parking Structure No. 3
93. Student Recreation and Wellness Center
94. Molecular and Life Sciences Center
95. Hall of Science
96. *Parking Structure 4*
97. *Parking Structure 5*
100. *Student Services Addition*
101. Student *Housing, Phase 1*
102. Student *Housing, Phase 2*
103. *Soccer Field and Sports Building*
104. *Food Services*

00. Miller House (Located Off Site)

LEGEND:
Existing Facility / *Proposed Facility*

NOTE: Existing building numbers correspond with building numbers in the Space and Facilities Data Base (SFDB)

SOURCE: CSULB 2019

FIGURE 6B

Existing Master Plan

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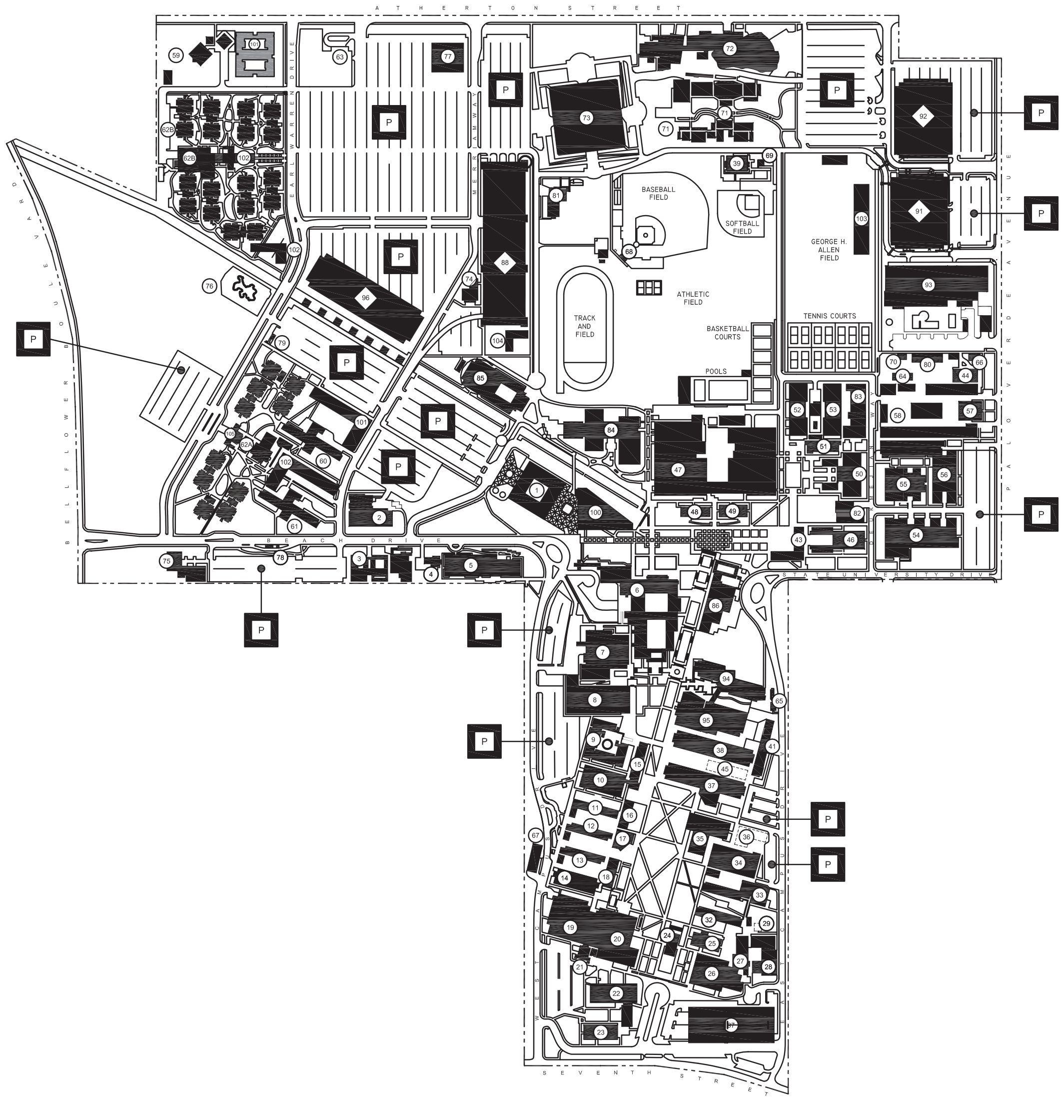

California State University Long Beach

Campus Master Plan
Proposed Master Plan Enrollment: 31,000 FTE
Approval Date: January/February 1963
Revised Date: May 2008
Main Campus Acreage: 322

N

0 250' 500' 1000'

Buildings	Campus Boundary	Parking
EXISTING BUILDING	EXISTING	EXISTING LOT
FUTURE BUILDING	FUTURE	FUTURE LOT
TEMPORARY BUILDING		EXISTING STRUCTURE
EXISTING BUILDING NOT IN USE		FUTURE STRUCTURE

SOURCE: CSULB 2019

FIGURE 7A

Updated Master Plan

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California State University, Long Beach

Master Plan Enrollment: 31,000 FTE

Master Plan approved by the Board of Trustees: January 1963, February 1963

Master Plan Revision approved by the Board of Trustees: September 1965, June 1966, November 1970, January 1972, May 1972, March 1974, July 1976, September 1976, November 1978, March 1982, January 1984, November 1984, November 1985, July 1986, September 1988, November 1990, September 1991, September 1994, November 1994, July 2003, May 2008

1. E. James Brotman Hall
2. Student Health Services
3. Nursing
4. Soroptimist House
5. Family and Consumer Sciences
6. University Student Union
7. Cafeteria
8. Bookstore
9. Psychology
10. Liberal Arts 5
11. Liberal Arts 4
12. Liberal Arts 3
13. Liberal Arts 2
14. Liberal Arts 1
15. Faculty Office 3
16. Faculty Office 2
17. Lecture Hall 150-151
18. College of Liberal Arts Administration
19. Library
20. Academic Services
21. Multi-Media Center
22. Ellis Education Building
23. Education 2
24. McIntosh Humanities Office Building
25. Language Arts Building
26. Theatre Arts
27. University Theatre
28. University Telecommunication Center
29. Art Annex
32. Fine Arts 1
33. Fine Arts 2
34. Fine Arts 3
35. Fine Arts 4
36. Faculty Office 4
37. Peterson Hall 1
38. Student Success Center
39. Soccer and Softball Clubhouse
41. Microbiology
43. College of Continuing and Professional Education
44. Electrical Substation (North)
45. Faculty Office 5
46. Social Sciences / Public Affairs
47. Kinesiology
48. Health and Human Services Classrooms
49. Health and Human Services Offices
50. Vivian Engineering Center
51. Engineering 2
52. Engineering 3
53. Engineering 4
54. Design
55. Human Services and Design
56. Engineering Technology
57. Facilities Management
58. Corporation Yard
59. Patterson Child Development Center
60. Los Alamitos Hall
61. Los Cerritos Hall

62A-F. Hillside Residence Halls
62G-Q. Parkside Residence Halls
62R. Parkside Dining Hall
62U. Hillside Dining Hall

63. Recycling Center
64. Greenhouse 3
65. Electrical Substation (South)
66. Reprographics
67. Communications - Main Distribution Facility A
68. Restrooms / Storage
69. Softball Field Restrooms
70. Communications - Main Distribution Facility B
71. University Music Center
72. Carpenter Performing Arts Center and Dance Center
73. Mike and Arline Walter Pyramid
74. Parking/Transportation Services
75. International House
76. Earl Burns Miller Garden
77. *Alumni Center*
78. Visitor Information Center
79. Communications - Main Distribution Facility C
80. University Police
81. Neil and Phyllis Barrett Athletic Administration Center
82. Outpost Food Service
83. Engineering/Computer Science
84. Steve and Nini Horn Center
85. College of Business
86. Central Plant
88. Pyramid Parking Structure
89. Housing and Residential Life
91. Palo Verde South Parking Structure
92. Palo Verde North Parking Structure
93. Student Recreation and Wellness Center
94. Molecular and Life Sciences Center
95. Hall of Science
96. *Parking Structure 4*
97. *Parking Structure 5*
100. *Student Services Addition*
101. Housing Expansion Phase 1 - Parkside North Housing
102. Student *Housing, Phase 2*
103. *Soccer Field and Sports Building*
104. *Food Services*

00. Miller House (Located Off Site)

LEGEND:
Existing Facility / *Proposed Facility*

NOTE: Existing building numbers correspond with building numbers in the Space and Facilities Data Base (SFDB)

SOURCE: CSULB 2019

FIGURE 7B

Updated Master Plan

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SOURCE: Dudek 2019

DUDEK

FIGURE 8

View from Southwestern Corner of Project Site Looking North

Housing Expansion Phase I - Parkside North Housing Project

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View of Project Site Looking Southwest from Intersection of East Atherton Street and Earl Warren Drive

View of Project Site from Intersection of East Atherton Street and Earl Warren Drive Looking Southwest Toward Existing Housing and Residential Life Building

View of Project Site Looking Southeast from East Atherton Street

SOURCE: Dudek 2019

FIGURE 9

Public Views of Project Site

Housing Expansion Phase I – Parkside North Housing Project

DUDEK

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Appendix A

Applicable Campus Master Plan Update EIR Mitigation Measures

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Applicable Campus Master Plan Update EIR Mitigation Measures

The mitigation measures identified in the Campus Master Plan Update EIR which are applicable to and incorporated into the Project, are listed in Table A-1 below for reference.

Table A-1
Mitigation Measures Identified in the Campus Master Plan Update EIR that are Applicable to the Project

Mitigation Measures
Water Use
1. The use of reclaimed water for irrigation will continue to be expanded to the extent feasible.
2. The University will continue to implement policies and programs to reduce water use, such as installing low-use water fixtures, waterless urinals, and other features.
3. The University will continue to coordinate with the Long Beach Water Department to reduce water use during water supply shortages.
Construction Traffic
1. A flag person will be employed as needed to direct traffic when heavy construction vehicles enter the campus from Bellflower Boulevard, Palo Verde Avenue, 7th Street, and Atherton Street.
2. Construction trucks will avoid travel on residential areas to access campus and use the City of Long Beach designated truck routes to travel to and from campus.
3. Construction–related truck traffic will be scheduled to avoid peak travel time on the I-405 and I-605 freeways, and State Route 22 (SR-22), as feasible.
4. If major pedestrian or bicycle routes on campus are temporarily blocked by construction activities, alternate routes around construction areas will be provided, to the extent feasible. These alternate routes will be posted on campus for the duration of construction.
5. If any bus stop or other transit facility on campus is obstructed by construction activity, the University, in cooperation with the transit service providers, will temporarily relocate such transit facility on campus as appropriate.
Construction-related Solid and Hazardous Waste
1. Demolition and construction inert materials, including vegetative matter, asphalt, concrete, and other recyclable materials will be recycled to the extent feasible.
2. Demolition materials that contain hazardous substances will be disposed at certified disposal facilities in strict compliance with all applicable regulations.
Archaeological Resources
1. All earth moving construction activity will be monitored by a professional archaeologist and Native American monitor. The archaeological monitor will conduct on-site cultural resources sensitivity training (crew education) as outlined below. If subsurface cultural materials are uncovered, construction work in the immediate vicinity will be halted and the emergency discovery procedures described below will be implemented.

Table A-1
Mitigation Measures Identified in the Campus Master Plan Update EIR that are Applicable to the Project

Mitigation Measures
2. Prior to the beginning of the earth moving construction activities (including initial grading of vegetation removal), the construction crew will be informed of the cultural resources values involved and of the regulatory protections afforded those resources. The crew will also be informed of procedures relating to the discovery of unanticipated cultural resources (as outlined below). The crew will be cautioned not to collect artifacts, and asked to inform a construction supervisor and the onsite archaeological monitor in the event that cultural remains are discovered during the course of construction. The onsite archaeological and Native American monitor will administer supplement briefing to all new construction personnel, prior to their commencement of earth moving construction activities.
3. In the event archaeological resources are unearthed during excavation activities associated with the project, work will be stopped immediately, and the discovery will be evaluated by a qualified archeologist, pursuant to the procedures set forth at CEQA Guidelines Section 15064.5.
4. In an event that a previously unknown archaeological resource is discovered and disturbance to such a resource cannot be avoided, a Phase-III, or "data recovery," phase of investigation will be required, pursuant to CEQA Guidelines Sect. 15064.5. The Phase-III study will generally consist of a limited scale program of archaeological excavation, radio-carbon dating of organic materials-such as shell midden and faunal remains, laboratory analysis, and report writing designed to assess the importance of the resource in question. Any resources recovered will be properly curated, as appropriate.
5. If human skeletal remains are found at the project site during earth moving activities such as grading or trenching, work will be suspended and the Los Angeles County Coroner's Office will be notified. Standard guidelines set by California law provides for the treatment of skeletal material of Native American origin (California Public Resources Code, Sections 5097.98 et seq.; Health and Safety Code, Section 7050.5 and others). Procedures to be employed in the treatment of human remains are found in, "A professional Guide for the Preservation and Protection of Native American Remains and Associated Grave Goods," published by the California Native American Heritage Commission.
6. Paleontological resources have not been identified on the CSULB campus; however, if fossilized shells, plants or bones are discovered during construction of an individual project, work will be suspended in the immediate vicinity of the finds, and the potential significance of the resources will be evaluated by a qualified specialist.
Short-term Construction Air Quality
1. Exposed surfaces are watered as needed
2. Soils stabilizers are applied to disturbed inactive areas as needed.
3. Ground cover is replaced quickly in inactive areas.
4. All stockpiles are covered with tarps or plastic sheeting.
5. All unpaved haul roads are watered daily and all access points used by haul trucks are kept clean during the site grading.
6. Speed on unpaved roads is reduced to below 15 miles per hour.
7. Trucks carrying contents subject to airborne dispersal are covered.
8. Grading and other high-dust activities cease during high wind conditions (wind speeds exceeding a sustained rate of 25 miles an hour).
9. Diesel particulate filters are installed on diesel equipment and trucks.
10. All construction equipment will be properly tuned.
11. To reduce emissions from idling, the contractor shall ensure that all equipment and vehicles not in use for more than 5 minutes are turned off, whenever feasible.
12. Low VOC-content paint, stucco, or other architectural coatings materials will be utilized to the extent possible.

Table A-1
Mitigation Measures Identified in the Campus Master Plan Update EIR that are Applicable to the Project

Mitigation Measures
13. Low VOC-content asphalt and concrete will be utilized to the extent possible.
14. The University will continue to comply with SCAQMD Rule 1403 (Asbestos Emissions from Renovation/Demolition Activities) and other pertinent regulations when working on structures containing asbestos, lead, or other toxic materials.
15. As appropriate, outdoor activities at the campus will be limited during high-dust and other heavy construction activities, including painting.
16. If construction activities occur adjacent to classrooms, student dormitories, health facilities and other sensitive receptors the University will either: i. Make findings and notify each sensitive receptor that construction activity will not affect such receptor, or ii. Install and maintain filters on interior ventilation system to reduce intake of pollutants until construction activity ceases.
Short-term Construction Noise
1. Muffled construction equipment will be used wherever possible.
2. The contractor will ensure that each piece of operating equipment is in good working condition and that noise suppression features, such as engine mufflers and enclosures, are working and fitted properly.
3. The contractor will locate noisy construction equipment as far as possible from residential areas.
4. Construction hours will be consistent with the City of Long Beach regulations of between 7 a.m. and 7 p.m. on weekdays and between 9 a.m. and 6 p.m. on Saturdays. No construction will take place on Sundays or federal holidays.
5. If a sustained high-noise construction activity takes place within 100 feet from classrooms or other noise-sensitive uses on campus, measures will be taken to limit the amount of noise affecting the sensitive receptor. These measures may include scheduling the activity when classes are not in session or the sensitive receptor is not use, providing a temporary barrier of no less than 6 feet in height made of wood or other similar materials; and/or other measures.
Long-term Air Quality
The following mitigation measure will continue to be implemented by the University to reduce stationary emissions to the extent feasible. 1. The University will exceed Title 24 energy saving requirements on campus by 15% or more on all new or renovation projects by applying a range of techniques and measures that may include planting trees to provide shade and shadow to buildings; use of energy-efficient lighting in buildings and parking lots; use of light-colored roofing materials; installing energy-efficient appliances; installing automatic lighting on/off controls; use of insulation and double-paned glass windows; connecting buildings to central air and water heating and cooling systems, and/or other measures.[15]

[15] As described in Section 1.3.4 above, the Project would achieve 10 percent greater than 2019 Title 24 standards. Since 2008, Title 24 standards have become increasingly stringent; between 2013 and 2016, there was a 28-percent reduction in energy use for residential land uses and, between 2016 and 2019, energy use was reduced further by 7 percent. Therefore, 10 percent above 2019 Title 24 standards would be a larger reduction than 15 percent above 2008 Title 24 standards.

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Appendix B

Archaeological and Paleontological Resources Assessment

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38 NORTH MARENGO AVENUE
PASADENA, CALIFORNIA 91101
T 626.204.9800 F 626.204.9834

May 14, 2019 11674

Michael Gardner
Manager of Campus Planning and Sustainability
California State University Long Beach
1250 Bellflower Boulevard – MS5701
Long Beach, California 92832

Subject: Archaeological and Paleontological Resources Assessment for the Housing Expansion Phase I - Parkside North Project, City of Long Beach, Los Angeles County, California

Dear Mr. Gardner:

Dudek was retained by California State University, Long Beach (CSULB) to conduct a cultural resources assessment in support of the proposed CSULB Housing Expansion Phase I - Parkside North Project (Project), located on the CSULB campus in the City of Long Beach (City), California. The CSU Board of Trustees (BOT) is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA) and for considering approval of the Project.

All cultural resources reporting for this Project was conducted by archaeologists under management of an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards, and all paleontological resources reporting for this Project was conducted following guidelines of the Society of Vertebrate Paleontology (SVP 2010). The present study documents the results of a California Historical Resources Information System (CHRIS) records search conducted at the South Central Coastal Information Center (SCCIC), a review of the California Native American Heritage Commission's (NAHC's) Sacred Lands File (SLF), the results of a paleontological records search from the Natural History Museum of Los Angeles County (LACM) archives, geological and paleontological desktop research, and a pedestrian survey.

Project Location and Present Use

The Project site is located in the northwest corner of the CSULB campus in the City of Long Beach, Los Angeles County, California. The CSULB campus is located in eastern Long Beach and is bound by East Atherton Street to the north, Palo Verde Avenue to the east, East 7th Street to the south, and Bellflower Boulevard to the west. Interstate 405 (I-405) runs east-to-west north of the campus, with interchanges at several streets that serve the campus. State Route 22 (SR-22) provides direct access to East 7th Street just southeast of the campus. Interstate 605 (I-605) terminates at I-405 and SR-22 east of the campus. Specifically, the Project is within Sections 2, 3, 34, and 35 of Township 4 and 5 South, Range 12 West, as shown on the *Los Alamitos* USGS Quadrangle (Appendix A: Figure 1).

The Project site is bound by East Atherton Street to the north, the on-campus recycling center to the east, on-campus residence halls to the south, and an on-campus daycare facility—the Isabel Patterson Child Development Center (daycare facility)—to the west. One building, the Housing and Residential Life (HRL) Office, built in 1989, is located at the southeast corner of the Project site. There is a sand volleyball court in the northern portion of the Project site and raised garden beds associated with a campus garden program at the northwest corner, immediately adjacent to the HRL Office to the north. A paved parking lot with 34 spaces associated with the daycare facility and six loading spaces is located in the southwestern corner of the Project site. The remainder of the Project site is grass-covered open space. Figure 2 (Appendix A) depicts the layout, extant buildings, and features as described above for the Project site.

Project Description

With only 2,000 existing beds on campus and a FTE enrollment of 30,500 students (CSU 2019), the campus has a great need to expand its residential offerings to serve student need and aid in academic success. CSULB is proposing to develop a new three- to four-story student housing building located on a site identified for a student housing building. The Project would include demolition of the existing, approximately 3,800-gross-square-foot (GSF) HRL Office building and construction of a new, approximately 136,000- GSF residential building. The new student housing building would provide 476 new student beds. The bed spaces would consist of approximately 412 student beds in a mix of double- and single-occupancy bedrooms, 64 student beds in 16 four-bed suites, and a total of four 1- and 2-bedroom apartments for faculty and staff. The building would be three stories on the north side along East Atherton Street, stepping back to four stories on the south side along the unnamed access road, facing the on-campus residence halls and commons. Utility infrastructure improvements, as well as new lighting and landscaping, would also be provided.

No general student parking would be provided on site, as most residents would be first-year students and, per campus policy, first-year students are not allowed to bring cars onto campus. Residents that do have cars would park in existing residential lots R2 and R3, which allow overnight parking. Overall, there are 32 existing parking spaces on the site and 34 spaces would exist on site after the Project is constructed. Five existing parking spaces in the daycare facility's surface parking lot in the southwest corner of the site would be removed; 22 spaces would remain for the daycare facility. Along the southern frontage, the existing loading zone containing six spaces (one of which is a handicapped space) would be designated for accessible passenger loading. In addition, six new, paved parking spaces would be created in the northwestern corner of the Parkside Residential Community adjacent to a line of existing parking spaces on what is an existing grass area (southwest of the Project site), which would include two electric vehicle charging stations.

All applicable mitigation measures identified in the 2008 Campus Master Plan Update EIR are part of the Project. The mitigation measures related to cultural resources are as follows:

1. All earth moving construction activity will be monitored by a professional archaeologist and Native American monitor. The archaeological monitor will conduct on-site cultural resources sensitivity training (crew education) as outlined below. If subsurface cultural materials are uncovered, construction work in the immediate vicinity will be halted and the emergency discovery procedures described below will be implemented.

2. Prior to the beginning of the earth moving construction activities (including initial grading of vegetation removal), the construction crew will be informed of the cultural resources values involved and of the regulatory protections afforded those resources. The crew will also be informed of procedures relating to the discovery of unanticipated cultural resources (as outlined below). The crew will be cautioned not to collect artifacts, and asked to inform a construction supervisor and the onsite archaeological monitor in the

event that cultural remains are discovered during the course of construction. The onsite archaeological and Native American monitor will administer supplement briefing to all new construction personnel, prior to their commencement of earth moving construction activities.

3. In the event archaeological resources are unearthed during excavation activities associated with the project, work will be stopped immediately, and the discovery will be evaluated by a qualified archeologist, pursuant to the procedures set forth at CEQA Guidelines Section 15064.5.

4. In an event that a previously unknown archaeological resource is discovered and disturbance to such a resource cannot be avoided, a Phase-III, or "data recovery," phase of investigation will be required, pursuant to CEQA Guidelines Sect. 15064.5. The Phase-III study will generally consist of a limited scale program of archaeological excavation, radio-carbon dating of organic materials-such as shell midden and faunal remains, laboratory analysis, and report writing designed to assess the importance of the resource in question. Any resources recovered will be properly curated, as appropriate.

5. If human skeletal remains are found at the project site during earth moving activities such as grading or trenching, work will be suspended and the Los Angeles County Coroner's Office will be notified. Standard guidelines set by California law provides for the treatment of skeletal material of Native American origin (California Public Resources Code, Sections 5097.98 et seq.; Health and Safety Code, Section 7050.5 and others). Procedures to be employed in the treatment of human remains are found in, "A professional Guide for the Preservation and Protection of Native American Remains and Associated Grave Goods," published by the California Native American Heritage Commission.

6. Paleontological resources have not been identified on the CSULB campus; however, if fossilized shells, plants or bones are discovered during construction of an individual project, work will be suspended in the immediate vicinity of the finds, and the potential significance of the resources will be evaluated by a qualified specialist.

Construction

Demolition of the existing building is anticipated to occur on July 1, 2019, and construction of the Project is expected to commence on August 13, 2019. The Project's construction duration is estimated to be at least 23 months. Construction is planned to occur continually without phasing. Construction equipment would include a tower crane and two concrete-placing booms, excavation/earthmoving equipment, forklifts, concrete trucks, delivery trucks, mobile cranes, and concrete pumps.

Construction staging is planned to occur off site within the existing campus laydown yard on Earl Warren Drive and, if approved, a portion of the Long Beach Unified School District's storage yard to the north of the Project site. The limits of construction disturbance, including disturbance from construction staging and laydown areas, are shown in Figure 3 (Appendix A).

Regulatory Setting

State

The California Register of Historical Resources (Public Resources Code section 5020 et seq.)

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

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

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

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

California Environmental Quality Act Statues and Guidelines

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

5. California PRC section 21083.2(g): Defines "unique archaeological resource."
6. California PRC section 21084.1 and CEQA Guidelines section 15064.5(a): Defines historical resources. In addition, CEQA Guidelines section 15064.5(b) defines the phrase "substantial adverse change in the

significance of an historical resource." It also defines the circumstances when a Project would materially impair the significance of a historical resource.

7. California PRC section 5097.98 and CEQA Guidelines section 15064.5(e): These statutes set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
8. California PRC sections 21083.2(b)-(c) and CEQA Guidelines section 15126.4: These statutes and regulations provide information regarding the mitigation framework for archaeological and historic resources, including options of preservation-in-place mitigation measures; identifies preservation-in-place as the preferred manner of mitigating impacts to significant archaeological sites.

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

The term "historical resource" also includes any site described in a local register of historic resources or identified as significant in a historical resources survey (meeting the requirements of California PRC section 5024.1(q)).

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

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

In 2014, CEQA was amended to apply to "tribal culture resources" as well, but the amendment did not provide a definition for such resources or identify how they were to be evaluated or mitigated. (PRC §§ 21084.2 and 21084.3.) Instead, PRC section 21083.09 required that the Office of Planning and Resource develop and adopt guidelines for analyzing "tribal cultural resources" by July 1, 2016. As of the effective date of this Draft Environmental Impact Report (EIR), however, those guidelines have not been finalized or adopted. Consequently, this EIR addresses only historic resources and unique archaeological resources.

All historical resources and unique archaeological resources – as defined by statute – are presumed to be historically or culturally significant for purposes of CEQA (California PRC section 21084.1; CEQA Guidelines section

15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (California PRC section 21084.1; CEQA Guidelines section 15064.5(a)). A site or resource that does not meet the definition of "historical resource" or "unique archaeological resource" is not considered significant under CEQA and need not be analyzed further. (PRC section 21083.2(a); CEQA Guidelines section 15064.5(c)(4)).

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

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

CEQA Guidelines section 15064.5(b)(2).

Pursuant to these sections, CEQA first evaluates whether a Project site contains any "historical resources," then assesses whether that Project will cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

When a Project significantly affects a unique archeological resource, CEQA imposes special mitigation requirements. Specifically, "[i]f it can be demonstrated that a Project will cause damage to a unique archeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:"

1. "Planning construction to avoid archeological sites."
2. "Deeding archeological sites into permanent conservation easements."
3. "Capping or covering archeological sites with a layer of soil before building on the sites."
4. "Planning parks, greenspace, or other open space to incorporate archeological sites."

Public Resources Code section 21083.2(b)(1)-(4).

If these "preservation in place" options are not feasible, mitigation may be accomplished through data recovery. (PRC § 21083.2(d); CEQA Guidelines § 15126.4(b)(3)(C).) PRC section 21083.2(d) states that "[e]xcavation as mitigation shall be restricted to those parts of the unique archeological resource that would be damaged or destroyed by the Project. Excavation as mitigation shall not be required for a unique archeological resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report."

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

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

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

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

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

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

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

The Native American Historic Resources Protection Act (PRC section 5097, et seq.) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a Project; and establishes the NRHC to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to one year in jail to deface or destroy a Native American historic or cultural site that is listed or may be eligible for listing in the CRHR.

California Native American Graves Protection and Repatriation Act

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

California Health and Safety Code

CEQA Guidelines section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC section 5097.98.

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (section 7050.5b). California PRC Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the Native American Heritage Commission (NAHC) within 24 hours (section 7050.5c). The NAHC will notify the Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Paleontological Resources

CEQA (PRC § 21000 et seq.), requires lead agencies to consider the potential effects of a project on unique paleontological resources. More specifically, CEQA requires an assessment of impacts associated with the direct or indirect destruction of unique paleontological resources or sites that are of value to the region or state. This study satisfies project requirements in accordance with CEQA and PRC Section 5097.5 (Stats 1965, c 1136, p. 2792). This analysis also complies with guidelines and significance criteria specified by the Society of Vertebrate Paleontology ([SVP] 2010).

Paleontological resources are explicitly addressed by CEQA, specifically in Section VII(f) of CEQA Guidelines Appendix G, the "Environmental Checklist Form," which addresses the potential for adverse impacts to "unique paleontological resource[s] or site[s] or unique geological feature[s]." This provision covers scientifically significant fossils – remains of species or genera new to science, for example, or fossils exhibiting features not previously recognized for a given animal group – as well as localities that yield fossils significant in their abundance, diversity, preservation, and so forth. PRC, sections 5097.5 and 30244, also regulate removal of paleontological resources from state lands, define unauthorized removal of fossil resources as a misdemeanor, and require mitigation of disturbed sites.

California State University, Long Beach

Policy on Native American Resources.

Section 3.7 of CSULB's Final Environmental Impact Report for the Campus Master Plan Update, published in 2008, summarizes CSULB's Policy on Native American Burial remains (CSULB 2008). The policy was developed through consultation with the local Native American community regarding construction projects and archaeological excavation. The policy applies to Native American burial remains, associated and unassociated funerary objects, sacred objects, and other cultural patrimony. Compliance with the policy is overseen by a CSULB committee on Native American Burial Remains and Cultural Patrimony, including CSULB's Director (or designee) of American Indian Studies; Two probationary or tenured CSULB faculty specializing in archaeology, biological anthropology, or cultural anthropology (or the most close related specializations available); Two additional probationary or tenured CSULB faculty (at least 1 of whom shall be of Native American heritage); Five representatives recommended by tribal authorities of Native American communities whose heritage is closely associated geographically with the counties of Los Angeles and Orange; and CSULB's Vice President (or designee) for Academic Affairs.

CSULB's Policy on Native American burial remains, associated and unassociated funerary objects, sacred objects, and other cultural patrimony includes the following procedures:

1. Prior to commencement of ground disturbing construction activities or archaeological work CSULB will confer with the Committee's Native American consultants.

2. The Sensitivity of the Project area will be discusses and recommendation for monitoring and the treatment of unanticipated discoveries will be determined

3. CSULB personnel may make recommendation regarding laboratory study of Native American burial remains or associated materials, should they be encountered. These recommendations should be considered by the appropriate tribal representative.

Campus Master Plan EIR Mitigation Measures

As indicated in the Project Description, all applicable mitigation measures identified in the 2008 Campus Master Plan Update EIR are part of the Project. The Campus Master Plan EIR mitigation measures that apply to cultural resources are included in the Project Description.

Background Research

As part of the cultural resources study prepared for the Project, Dudek conducted a CHRIS records search on March 6, 2019 of the entire CSULB campus and a half (0.5) mile records search buffer surrounding the campus at the SCCIC. This search included their collections of mapped prehistoric, historic, and built environment resources, Department of Parks and Recreation Site Records, technical reports, and ethnographic references. Additional consulted sources included historical maps of the Project site, the NRHP, the CRHR, the California Historic Property

Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility. The results of the records search are presented in Confidential Appendix B.

Previously Conducted Cultural Resource Studies

Results of the cultural resources records search indicated that 56 previous cultural resource studies have been conducted within a 0.5-mile (800 meters) of the CSULB campus between 1972 and 2012. Thirty-one of these studies were conducted within or overlap a portion of the CSULB campus. Of the 31 studies conducted within the CSULB campus, ten overlap the Project site.

Of the ten studies that overlap the Project site, six were prepared in support of various developments or improvements at CSULB (LA-04270, -04274, -04275, -04276, -04277, and -08495). Two of the overlapping reports are cultural resource management plans and research designs for the preservation of archaeological resources at the CSULB campus (LA-08498 and LA-08497). One report includes comments on CSULB's cultural resource management plan from the Office of Historic Preservation (LA-04355). The final overlapping report presents a review of the Native American village of Puvunga, which was located within the general boundaries of the CSULB campus (LA-06160). The ten overlapping studies were all prepared between 1993 and 2003.

Table 1, below, summarizes all 56 previous cultural resource studies followed by a brief summary of each study that overlaps the Project site.

Table 1. Previous Technical Studies Within a 0.5-Mile of the CSULB Campus

SCCIC Report Number (LA-)	Authors	Year	Title	Proximity to CSULB Campus	Proximity to Project Site
00012	Crabtree, Robert H.	1973	Environmental Data Base for The? in the City of Long Beach, California	Outside	Outside
00057	Leonard, Nelson N. III	1974	A Reconnaissance and Evaluation of the Archaeological Resources of the Veterans Administration Hospital Long Beach, California	Within	Outside
00083	Rosen, Martin D.	1975	Evaluation of the Archaeological Resources and Potential Impact of the Joint Outfall System's Improvements on Sewer Treatment Plants and Installation Routes for New Large Diameter Sewers, Los Angeles County	Outside	Outside
00263	Anonymous	1980	Archaeological Test Report on the Japanese Garden Arboretum/museum Site Located on the Campus of the California State University at Long Beach	Within	Outside
00451	Desautels, Roger J.	1978	Archaeological/paleontological Survey Report on the Proposed Arboretum Japanese Garden Project Located at California State University Long Beach Job No. 11542 - Service Agreement No. 371-068-sc-367	Within	Outside
00488	Hector, Susan M.	1977	An Archaeological Resource Survey and Impact Assessment of Tract 29263, Los Angeles County	Outside	Outside

Table 1. Previous Technical Studies Within a 0.5-Mile of the CSULB Campus

SCCIC Report Number (LA-)	Authors	Year	Title	Proximity to CSULB Campus	Proximity to Project Site
00491	Dixon, Keith A.	1977	Inventory of Archaeological Resources, CSULB Campus	Within	Outside
00503	Dixon, Keith A.	1974	Archaeological Resources and Policy Recommendations of Long Beach	Within	Outside
00561	Desautels, Roger J.	1979	Archaeological/historical Report on Archaeological Sites Lan 235, LAN-1003, LAN-1004, and the Historical Resources Project No.c-06-1137-110 Located at California State University at Long Beach, California	Outside	Outside
00939	Allen, Lawrence P.	1980	The Sims Pond Site, CA-LAN-702, Alamitos Bay, Los Angeles County, California	Outside	Outside
00987	Van Horn, David M. and J. Brock	1981	Archaeological Survey Report: the Bridge Replacement on Anaheim Road at the Los Cerritos Channel, City of Long Beach, California	Outside	Outside
01075	Desautels, Roger J.	1980	Archaeological Survey Report on Two Proposed Parking Areas (parking 79) Located on the Campus at California State University, Long Beach, Agreement #371-069-sc-392	Outside	Outside
01540	Whitney-Desautels, Nancy A.	1986	Archaeological Monitoring for the Trench for Joint Outfall Unit 5a, Section 3, Trunk Sewer Replacement, Part Ii, Across the Campus of California State University at Long Beach	Within	Outside
01541	Whitney-Desautels, Nancy A., Vickie Clay, Lorraine S. Gross, and Kevin J. Peter	1986	Archaeological Test Investigations of a Segment of the Joint Outfall Section 3 Trunk Sewer Replacement Part	Within	Outside
02399	Winman, Lois J. and E. Gary Stickel	1978	Los Angeles-Long Beach Harbor Areas Cultural Resource Survey.	Outside	Outside
02792	Dixon, Keith A. and Jane Rosenthal	1981	Review of "Initial Study and Negative Declaration, Arboretum II, Museum/Gallery"; with "Archaeological Test Report on the Japanese Garden Arboretum/museum Site (LAN-235)…" prepared by Scientific Resource Surveys, Inc., Santa Ana, December 1980	Within	Outside
02793	Desautels, Roger J.	1981	Dixon/Rosenthal Rebuttal: LAN-1003 and LAN- 1004	Within	Outside
02794	Dixon, Keith A.	1972	Reviving an Archaeological Project at Rancho Los Alamitos	Within	Outside

Table 1. Previous Technical Studies Within a 0.5-Mile of the CSULB Campus

SCCIC Report Number (LA-)	Authors	Year	Title	Proximity to CSULB Campus	Proximity to Project Site
02795	Desautels, Roger J., K. Dixon, and M. Rosen	1979	Correspondence Between R. Desautels, K. Dixon, and M. Rosen	Within	Outside
02864	Dixon, Keith A.	1993	Comment on Second Incomplete Draft of Implementation Guidelines for the Preservation of Archaeological Resources in Campus Development Project, California State University, Long Beach; Work in Progress As of July 1993	Within	Outside
02870	Drover, Christopher E.	1993	Letter to Mr. Douglas Wood Concerning LAN-235	Within	Outside
03287	Demcak, Carol R.	1995	Report of Records Search for Los Altos Center	Outside	Outside
03303	Whitney-Desautels, Nancy A., Bonner, Wayne H., and Diane F. Bonner	1993	Cultural Resources Assessment of Parking Lot "O" (CA-LAN-1002) Long Beach, Los Angeles County, California (a Scientific Contribution to Non-site Archaeology)	Within	Outside
03370	Demcak, Carol R.	1996	Report of Archaeological Monitoring at Los Altos Center, City of Long Beach	Outside	Outside
03583	Bucknam, Bonnie M.	1974	The Los Angeles Basin and Vicinity: a Gazetteer and Compilation of Archaeological Site Information	Outside	Outside
04091	Milliken, Randell and Hildebrandt, William R.	1997	Assessment of Archaeological Resources at the Rancho Los Alamitos Historic Ranch and Gardens	Within	Outside
04268	Boxt, Matthew A.	1995	Case No. Bc 087212: Declaration of Dr. Matthew A. Boxt in Opposition to the Plaintiff's Motion for Stay of Judgement	Within	Outside
04269	Zahniser, Jack L.	1974	Archaeological Salvage Excavations at 4-LAN-306 (known As Puvunga) Summer, 1973	Outside	Outside
04270	Underwood, Jackson	1993	Archaeological Testing for the Information Booth Project, California State University, Long Beach	Within	Overlapping
04274	Underwood, Jackson	1993	Archaeological Survey and Testing for the Pipeline Project California State University, Long Beach	Within	Overlapping
04275	Underwood, Jackson	1993	Archaeological Testing at the Central Plant Site, California State University, Long Beach	Within	Overlapping
04276	Underwood, Jackson	1993	Archaeological Testing of Phase I, the Pedestrian Walkway, Parking Structure B California State University, Long Beach	Within	Overlapping

Table 1. Previous Technical Studies Within a 0.5-Mile of the CSULB Campus

SCCIC Report Number (LA-)	Authors	Year	Title	Proximity to CSULB Campus	Proximity to Project Site
04277	Underwood, Jackson	1993	Archaeological Testing at the Ticket Booth Site, California State University, Long Beach	Within	Overlapping
04355	Widell, Cherilyn E.	1994	A Cultural Resources Management Plan for the California State University, Long Beach	Within	Overlapping
04364	Carter, Chris and Nill Neitzel	1977	Report on Salvage Excavation at CA-LAN-705 in Long Beach, California	Within	Outside
04480	Desautels, Roger J.	1980	Archaeological Survey Report on Two Proposed Parking Areas (parking 79) Located on the Campus at California State University, Long Beach Service Agreement #371-069-sc-392 (3-19-80)	Within	Outside
05215	McKenna, Jeanette A.	2001	A Cultural Resources Investigation of the Proposed Long Beach Ocean Desalination Project, Long Beach, Los Angeles County, California	Outside	Outside
05218	McKenna, Jeanette A.	1999	Eastern Industry/majestic Realty Project Area a Phase I Prehistoric Cultural Resource Investigation, City of Industry, Los Angeles County, Ca	Outside	Outside
05313	Sirro, Adam	2000	Negative Archaeological Survey Report:07-405-1.78-7-173-3n7701, Route 405 Off-ramp to Palo Verde Ave./woodruff Ave. in the City of Long Beach	Outside	Outside
05727	Cottrell, Marie G.	1975	A Report of Test Excavations : CA-LAN-702	Outside	Outside
06089	McCormick, Steven and Ferraro, David D.	2002	Literature Review, Field Reconnaissance, and Grading Monitoring of an Abandoned Oil Field in Long Beach, California	Outside	Outside
06160	Baksh, Michael, Christopher J. Doolittle, David D. Earle, Donn R. Grenda, and William McCawley	1994	Puvunga: a Review of the Ethnohistoric, Archaeological, and Ethnographic Issues Surrounding a Gabrielino Rancheria Near Alamitos Bay, Los Angeles County, California Draft	Within	Overlapping
06163	Cottrell, Marie G.	1975	Archaeological Test Excavations at CA-LAN-702	Outside	Outside
06829	Rogle, Eugene	1993	Lies, Bribes, and Archaeology	Within	Outside

Table 1. Previous Technical Studies Within a 0.5-Mile of the CSULB Campus

SCCIC Report Number (LA-)	Authors	Year	Title	Proximity to CSULB Campus	Proximity to Project Site
08489	Duke, Curt and Judith Marvin	2003	Cultural Resource Assessment: Cingular Wireless Facility No. SM 118-03, Long Beach, Los Angeles County, California	Within	Outside
08495	URS	2003	California State University, Long Beach Northeast Campus Improvements Environmental Impact Report (EIR) Appendix F: Cultural Resources Technical Report	Within	Overlapping
08497	Raab, Mark L. and Matthew Boxt	1993	A Research Design and Implementation Guidelines for the Preservation of Archaeological Resources in Campus Development Projects, California State University, Long Beach: Work in Progress As of 27 October, 1993	Outside	Overlapping
08498	Raab, Mark L. and Matthew Boxt	1994	A Cultural Resources Management Plan for the California State University, Long Beach, Work in Progress As of 3-19-1994	Within	Overlapping
09208	Bonner, Wayne H.	2007	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate LA02552A (MOD) (VA Hospital), 5901 East 7th Street, Long Beach, Los Angeles County, California	Outside	Outside
09839	Christeen Taniguchi	2006	Historic Architectural Survey Report: Long Beach VA Hospital Seismic Corrections Project, Long Beach, Los Angeles County, CA	Within	Outside
09840	Carrie Wills	2006	Phase I Cultural Resources Assessment, Long Beach VA Hospital Seismic Corrections Project, Long Beach, Los Angeles County, California	Within	Outside
10527	Weinman, Lois J.	1978	Los Angeles-Long Beach Harbor Areas Regional Cultural History, Los Angeles County, California	Outside	Outside
10799	Wlodarski, Robert J.	2010	Record Search and field reconnaissance for proposed AT&T Wireless Telecommunications Site LA0188, located at 5500 East Atherton Street, Long Beach, California, 90815	Outside	Outside
11891	Supernowicz, Dana	2012	Cultural Resources Study of the Anthony's Plaza Project, Metro PCS California, LLC Site No. MLAX04207A, 1800 Palo Verde Avenue, Long Beach, Los Angeles County, California	Outside	Outside
12224	Mason, Roger, Cotterman, Cary, and Smallwood, Josh	2011	Phase I Archaeological Survey and Phase II Historic Building Evaluations for the Seismic Corrections, Mental Health and Community Living Center Project Depart of Veterans Affairs Medical Center, Long Beach, Los Angeles County, California	Outside	Outside
OR-04172	Chasteen, Carrie	2011	Historic Property Survey Report San Diego Freeway (I-405) Improvement Project SR-73 to I-605, Orange and Los Angeles Counties	Outside	Outside

LA-04270

Archaeological Testing for the Information Booth Project, California State University, Long Beach (Underwood 1993) reports the results of archaeological testing within the proposed location for an information booth on the CSULB campus and construction monitoring for that project. No significant cultural material was found during the testing; however, due to the large amount of nearby archaeological sites the author recommended that construction activities be monitored by a qualified archaeologist and a representative of the Gabrieleño/Tongva Tribal Council. Construction was completed in November and was monitored by both an archaeologist and a tribal monitor. No significant cultural material was identified during monitoring. No further archaeological work was recommended.

LA-04274

Archaeological Survey and Testing for the Pipeline Project California State University, Long Beach (Underwood 1993) reports the results of an archaeological survey and archaeological testing within the proposed location for an underground pipeline at the CSULB campus. During the subsurface testing, site boundaries were determined to be very different from recorded boundaries in many cases. The subsurface testing did identify resources, however, the authors determined that the limited impact possible from the proposed pipeline would not significantly impact archaeological resources. The author recommended that construction activities be monitored by a qualified archaeologist and a representative of the Gabrieleño/Tongva Tribal Council.

LA-04275

Archaeological Testing at the Central Plant Site, California State University, Long Beach (Underwood 1993) reports the results of background research and archaeological testing in support of the proposed Central Plant project at the CSULB campus. The proposed plant site overlapped with a recorded archaeological site. Subsurface testing revealed that the majority of cultural materials were found in fill dirt. The author stated that the site appeared to have been destroyed and found that further archaeological research was not warranted. The author recommended that construction activities be monitored by a qualified archaeologist and a representative of the Gabrieleño/Tongva Tribal Council.

LA-04276

Archaeological Testing of Phase I, the Pedestrian Walkway, Parking Structure B California State University, Long Beach (Underwood 1993) reports the results of archaeological testing within the proposed location of a pedestrian bridge and walkway within the CSULB campus and construction monitoring. The proposed bridge site overlapped with the western edge of archaeological site CA-LAN-10005. No archaeological materials were found in situ during archaeological testing. Due to the large amount of nearby archaeological sites the author recommended that construction activities be monitored by a qualified archaeologist and a representative of the Gabrieleño/Tongva Tribal Council. Construction was completed in November and was monitored by both an archaeologist and a tribal monitor. No significant cultural material was identified during monitoring. No further archaeological work was recommended.

LA-04277

Archaeological Testing at the Ticket Booth Site, California State University, Long Beach (Underwood 1993) reports the results of archaeological testing, laboratory research, and construction monitoring for the proposed Ticket Booth project at the CSULB campus. The proposed Ticket Booth site overlapped with site CA-LAN-001002. The testing identified traces of shells and four lithic artifacts. The soil was reported to have been heavily disturbed by rodent burrowing, and the lithic materials were identified in fill, indicating they had been relocated from their original location, possibly by a gopher. The author stated that the site contained very little research potential. The author recommended that construction activities be monitored by a qualified archaeologist and a representative of the Gabrieleño/Tongva Tribal Council.

LA-04355

A Cultural Resources Management Plan for the California State University, Long Beach (Widell 1994) reports the Office of Historic Preservation's comments on CSULB's Cultural Resource Management Plan (LA-08497 and LA-08498). The reviewer made various suggestions to be taken into consideration, such as including a more thorough review of dating techniques for archaeological sites and moving various sections to different chapters to better improve the report. The reviewer also made various comments about the prehistoric and ethnographic overview sections, which are academic in nature. The reviews recommended adding a more thorough review of what is known from previous investigations conducted at CSULB. Finally, the reviewer stated that the Native American Heritage Commission should have a chance to review the document. This report did not include a review of archaeological sites within the CSULB campus.

LA-06160

Puvunga: a Review of the Ethnohistoric, Archaeological, and Ethnographic Issues Surrounding a Gabrielino Rancheria Near Alamitos Bay, Los Angeles County, California Draft (Baksh et. al. 1994) reports a thorough analysis of the Gabrielino village site, *Puvunga.* The report summarizes ethnohistoric research on the site and archaeological research conducted at the CSULB Campus and in the Alamitos Bay region. No mitigation or recommendations for archaeological research is suggested for the CSULB campus as this report is academic in nature.

LA-08495

California State University, Long Beach Northeast Campus Improvements Environmental Impact Report (EIR) Appendix F: Cultural Resources Technical Report (URS 2003) reports the results of a records search, archival research, and Native American consultation for proposed development within the CSULB Campus. The study found that three resources are within the proposed development areas, two of which did not appear eligible for the CRHR (CA-LAN-001001 and P-19-120038). The third resource, CA-LAN-002630, did appear eligible for the CRHR. The proposed development was determined to pose a possible significant impact to site CA-LAN-002630 and the authors stated that if the resource could not be avoided than additional testing should be conducted. Additionally, the authors recommended archaeological and Native American monitoring for the proposed development.

LA-08497

A Research Design and Implementation Guidelines for the Preservation of Archaeological Resources in Campus Development Projects, California State University, Long Beach: Work in Progress as of 27 October, 1993 (Raab and Boxt 1993) present guidelines for the protection of archaeological resources on the CSULB campus. The report includes archival research, analysis of the resources on the CSULB campus, and recommendations for testing, reporting, and curation of archaeological materials. The report presents a thorough analysis of archaeological testing techniques and an ethnohistoric and historic analysis of the Long Beach area.

LA-08498

A Cultural Resources Management Plan for the California State University, Long Beach, Work in Progress As of 3-19-1994 (Raab and Boxt 1994) present guidelines for the protection of archaeological resources on the CSULB campus. The report includes archival research, analysis of the resources on the CSULB campus, and recommendations for testing, reporting, and curation of archaeological materials. This report is an updated version of LA-08497.

Previously Recorded Cultural Resources

A total of 54 previously recorded cultural resources have been documented within a 0.5-mile of the CSULB campus. Twenty-nine of these resources have been recorded within the CSULB campus. Of the 29 previously recorded resources, one overlaps the Project site (CA-LAN-000705). The remaining 53 resources within the 0.5-mile record search area include 38 prehistoric sites, two multicomponent sites, one historic site, one historic building with an associated site, and 11 historic buildings. All 54 resource are summarized in Table 2, below, followed by a brief summary of site CA-LAN-000705.

Table 2. Previously Recorded Resources Within a 0.5-Mile of the CSULB Campus

Primary (P-19-)	Trinomial (CA-LAN-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to CSULB Campus	Proximity to Project Site
000102	000102	Prehistoric Site	Lithic scatter; Shell Midden; Habitation debris; Reported to have been totally destroyed as of 1973	Not listed	1966 (S.M. Stevens)	Outside	Outside
000232	000232	Prehistoric Site	Shell midden; Habitation debris	Not listed	1961 (Dixon)	Outside	Outside
000233	000233	Prehistoric Site	Shell midden; Lithic scatter; Habitation debris	Not listed	1961 (Dixon)	Outside	Outside
000234	000234	Prehistoric Site	Puvunga Indian Village Site; Shell midden; Lithic scatter; Habitation debris	1D: Listed on NR (1974)	1960 (Dixon); 1973 (Keith A. Dixon, CSULB)	Within	Outside

Table 2. Previously Recorded Resources Within a 0.5-Mile of the CSULB Campus

Primary (P-19-)	Trinomial (CA-LAN-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to CSULB Campus	Proximity to Project Site
000235	000235	Prehistoric Site	Puvunga Indian Village Site: Lithic scatter; Burials; Habitation debris	1D: Listed on NR (1974)	1960 (Dixon); 1973 (Keith A. Dixon, CSULB); 1974 (Dixon); 2007 (Keith A. Dixon)	Within	Outside
000236	000236	Prehistoric Site	Habitation debris; Shell midden	Not listed	1959 (Dixon)	Outside	Outside
000271	000271	Prehistoric Site	Shell midden; lithic scatter; Habitation debris; Probably mostly destroyed by earlier development	Not listed	1959 (Dixon)	Outside	Outside
000273	000273	Prehistoric Site	Margo Street Site; Shell midden; lithic scatter; Habitation debris	Not listed	1959 (Dixon)	Outside	Outside
000274	000274	Prehistoric Site	Shell midden; Lithic scatter; Habitation debris	Not listed	1961 (Dixon)	Outside	Outside
000275	000275	Prehistoric Site	Shell midden; Habitation debris	Not listed	1959 (Dixon)	Outside	Outside
000306	000306	Prehistoric Site (Element of district)	Puvunga Indian Village Site / Los Alamitos Rancheria: Lithic scatter; Habitation debris	1D: Listed on NR (1974)	1951; 1964 (K. Dixon, Long Beach State College); 1972 (Keith A. Dixon, Dept. of Anthro, CSLB); 1973 (Keith A. Dixon, CSULB); 1997 (Randy Milliken, Bill Hilldebrandt, and Brent Hallock, Far Western Anthropological Research Group, Inc.)	Outside	Outside
000701	000701	Prehistoric Site	Shell midden; Lithic scatter; Habitation debris	Not listed	1974 (K. Dixon)	Outside	Outside
000702	000702	Prehistoric Site	Shell midden; Habitation debris	Not listed	1974 (Clutter and Howard)	Outside	Outside

Table 2. Previously Recorded Resources Within a 0.5-Mile of the CSULB Campus

Primary (P-19-)	Trinomial (CA-LAN-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to CSULB Campus	Proximity to Project Site
000703	000703	Prehistoric Site	The Park Estates Site; Shell Midden; Lithic scatter; Habitation debris; Question arose as to whether LAN-703 is a true site or just the redeposited potions of imported soils, shells, and artifacts	Not listed	1974 (Dixon); 1994 (Matthew A. Boxt)	Outside	Outside
000704	000704	Prehistoric Site	Subsumed under LAN-703	Not listed	1974 (Dixon)	Outside	Outside
000705	000705/H	Multi-component Site	The CSULB Isabel Patterson Child Development Center Site: Refuse deposit; Lithic scatter; Shell midden; Habitation debris; Reported to have been damaged by construction	Not listed	1974 (Dixon); 1993 (M. Boxt, CSULB)	Within	Intersecting
001000	001000	Prehistoric Site	The CSULB Swimming Pool Site; Shell midden	Not listed	1979 (K. Dixon); 1994 (M. Boxt, CSULB)	Within	Outside
001002	001002	Prehistoric Site	Shell midden	Not listed	1979 (K. Dixon)	Within	Outside
001003	001003	Prehistoric Site	Originally reports as a prehistoric site with shell and lithic material. In 1994 reported to not be an actual archaeological site	Not listed	1979 (Dixon); 1994 (M. Boxt, CSULB)	Within	Outside
001004	001004	Prehistoric Site	Originally reports as a prehistoric site with shell and lithic material. In 1994 reported to not be an actual archaeological site	Not listed	1979 (K. Dixon); 1994 (M. Boxt, CSULB)	Within	Outside
001005	001005	Prehistoric Site	Originally reports as a prehistoric site with shell and lithic material. In 1994 reported to not be an actual archaeological site	Not listed	1979 (K. Dixon); 1994 (M. Boxt, CSULB)	Within	Outside
001006	001006	Prehistoric Site	Shell midden	Not listed	1979 (K. Dixon)	Within	Outside
001007	001007	Prehistoric Site	Shell midden	Not listed	1979 (K. Dixon)		Outside

Table 2. Previously Recorded Resources Within a 0.5-Mile of the CSULB Campus

Primary (P-19-)	Trinomial (CA-LAN-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to CSULB Campus	Proximity to Project Site
002616	002616	Prehistoric Site	Lithic scatter; Shell midden; Habitation debris	Not listed	1997 (Matthew A. Boxt, CSULB Dept. of Physical Planning and Facilities Management)	Within	Outside
002629	002629	Prehistoric Site	Lithic scatter; shell midden; Habitation debris	Not listed	1977; 1994 (Matthew A. Boxt, CSULB); 1998 (Matthew A. Boxt, CSULB)	Within	Outside
002630	002630/H	Multi-component Site	Privies/dumps/trash scatters; Lithic scatter; Shell midden; Ceramic scatter; Habitation debris	Not listed	1994 (Matthew A. Boxt, CSULB); 1998 (Matthew A. Boxt, CSULB)	Within	Outside
003040	003040H	Historic Building and associated Site	Standing structures; Oil Extraction Facility with tank farms; Destroyed in 2000	Not listed	2000 (David D. Ferraro, RMW Paleo Associates)	Outside	Outside
004797	004747H	Historic Site	Navy Hospital Refuse Deposit	Not listed	2015 (Spillane, Tim)	Within	Outside
120016	--	Historic Site	Refuse deposit; Secondary deposit of soil moved during previous grading activities	Not listed	Unknown	Outside	Outside
120038	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120039	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside

Table 2. Previously Recorded Resources Within a 0.5-Mile of the CSULB Campus

Primary (P-19-)	Trinomial (CA-LAN-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to CSULB Campus	Proximity to Project Site
120040	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120041	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120042	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120043	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120044	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120045	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120046	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120047	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside

Table 2. Previously Recorded Resources Within a 0.5-Mile of the CSULB Campus

Primary (P-19-)	Trinomial (CA-LAN-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to CSULB Campus	Proximity to Project Site
120048	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120049	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120050	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120052	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
120053	--	Prehistoric Site	Traces of shell midden and lithic scatter; Likely secondary deposit of soil moved during previous grading activities	Not listed	1977 (Unknown)	Within	Outside
178684	--	Historic Building	Rancho Los Alamitos: Farm/ranch; OHP Property Number - 029364	Listed on NRHP, 1981	1981 (N. Sanquist, Bixby Ranch Company)	Outside	Outside

Table 2. Previously Recorded Resources Within a 0.5-Mile of the CSULB Campus

Primary (P-19-)	Trinomial (CA-LAN-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to CSULB Campus	Proximity to Project Site
187656	--	Historic Building	Long Beach Veterans Medical Center (VAMCLB): Government building ; Military property; Hospital; OHP Property Number - 150929;	Not recommended for listing on the NR	2002 (Marvin, Judith and Kip Harper, LSA Associates, Inc.); 2006 (Taniguchi, Christeen and Ben Taniguchi, Galvin Preservation Associated Inc.); 2010 (Josh Smallwood and Cary D. Cotterman, ECORP Consulting, Inc.)	Within	Outside
189882	--	Historic Building	1911 N Hidden Lane: Single family property	Not listed	2010 (Carrie Chasteen, Parsons)	Outside	Outside
189883	--	Historic Building	1921 N Hidden Lane: Single family property	Not listed	2010 (Carrie Chasteen, Parsons)	Outside	Outside
189884	--	Historic Building	1967 N Hidden Lane: Single family property	Not listed	2010 (Carrie Chasteen, Parsons)	Outside	Outside
189885	--	Historic Building	2015 N Hidden Lane: Single family property	Not listed	2010 (Carrie Chasteen, Parsons)	Outside	Outside
189886	--	Historic Building	7140 E Atherton Drive: Single family property	Not listed	2010 (Carrie Chasteen, Parsons)	Outside	Outside
189887	--	Historic Building	7100 E Atherton Drive: Single family property	Not listed	2010 (Carrie Chasteen, Parsons)	Outside	Outside
189991	--	Historic Building	Olan & Aida Hafley House: Single family property; OHP Property Number - 181096	Listed on National Register 2011	Unknown	Outside	Outside

Table 2. Previously Recorded Resources Within a 0.5-Mile of the CSULB Campus

Primary (P-19-)	Trinomial (CA-LAN-)	Resource Age and Type	Resource Description	NRHP Eligibility	Recording Events	Proximity to CSULB Campus	Proximity to Project Site
190055	--	Historic Building	Anthony's Shopping Plaza: 1-3 story commercial building	Not recommended for listing on the NR	2012 (Dana E. Supernowicz, Historic Resource Associates)	Outside	Outside

CA-LAN-000705

Site CA-LAN-000705 is a prehistoric lithic scatter with habitation debris which was originally recorded in 1974 by K. Dixon and updated in 1993 by Matthew Boxt. During the original site recordation, shell fragments were visible throughout the soil, including within landscaped areas. Additionally, Dixon stated that the full extent of the site could not be determined without subsurface testing and a further survey around adjacent properties. The 1993 site record states that the midden associated with the site was buried beneath 1.5 meters of topsoil and alluvium. Artifacts observed during the 1993 site visit included 79 pieces of debitage, 61 shell beads, one pestle, one steatite bowl fragment, one utilized shell, two bone tool fragments, 11,000 pieces of terrestrial and marine faunal remains, and 150 kilograms of invertebrate faunal specimens. Additionally, historic resources were observed at the site, included earthenware fragments, glass shards, a base from an 1895–1910 H.J, Heinz mustard jar, and modern construction debris. The site was determined to be a prehistoric temporary or seasonal camp associated with CA-LAN-1000 and CA-LAN-2616, which were part of a larger regional settlement pattern within the coastal plain of the lower San Gabriel River and to the relict Bouton Creek. Boxt states, that the site had been damaged by construction, but indicated that buried components may still present significant research possibilities. Specifically, Boxt states that buried deposits lie to the north, under the lawn in front of the Isabel Patterson Child Development Center, and to the east in the parking lot between the CSULB Housing Office and Isabel Patterson Infant Toddler Center.

Native American Coordination

On March 6, 2019, Dudek requested a search of the SLF from the NAHC. A response letter was received via email from the NAHC on March 14, 2019, stating that the results of the SLF search indicated that the Project site and surrounding area was sensitive for the presence of Native American cultural resources. The NAHC also provided a list of five Native American groups and individuals who may have knowledge of cultural resources within the Project site. Letters were sent to each of the five representatives on May 1, 2019. This coordination was conducted for informational purposes only and does not constitute formal government-to-government consultation. To date, one response has been received from the Gabrieleño Band of Mission Indians – Kizh Nation, Brandy Salas, admin specialist for the Gabrieleño Band of Mission Indians – Kizh Nation responded via email on May 1, 2019 stating that they would like consult directly with the lead agency for the Project. This response was forwarded to CSULB. Should any more responses be received within 30 days of when the letter was delivered they will be forwarded to the Campus Planning and Sustainability at CSULB. Documentation of coordination with Native American groups and individuals is provided in Appendix C.

Historic Topographic and Aerial Review

Dudek consulted historic maps and aerial photographs to understand the development of the Project site and the surrounding CSULB campus and vicinity. Topographic maps were available from the following years: 1952, 1953, 1963, 1972, 1994, 2002, 2003, 2004, 2005, 2009, 2010, 2012, and 2014 (NETR 2019a). Aerial images were available from the following years: 1896, 1899, 1902, 1906, 1911, 1916, 1923, 1924, 1925, 1926, 1929, 1932, 1934, 1935, 1942, 1950, 1957, 1960, 1963, 1966, 1975, 1977, 1982, 2012, and 2015 (NETR 2019b).

The first topographic map showing the Project site dates to 1896 and shows that at this time there were no developments within or near the CSULB Campus. A river or creek ran southeast through the area where the campus is now located until it joined the San Gabriel River which ran south and discharged into the wetlands that were located in Alamitos Bay. This creek may have been the natural course of the creek which now runs through the CSULB campus. The 1896 map shows that Alamitos Bay was much larger at this time and contained wetland areas which appeared to extend to what is now the SR-22 Freeway. The 1896 map also shows several roads running through the general area. Topographic maps show no changes to the area until 1925. The 1925 topographic map shows that the City of Long Beach had begun to be developed by this time. The majority of the developments were to the west of the Long Beach Greenbelt and the area where the CSULB campus is now located was still devoid of development, though several new streets had been laid out, including Palo Verde Avenue. The wetland area at Alamitos Bay also appears to have been dredged and the water feature that had once ran through the CSULB Campus area was now gone. The 1925 map also appears to indicate that the San Gabriel River, located east of the CSULB Campus, had been channelized. The next topographic map that shows changes to the area is the 1942 map. By 1942, the SR-22 had been built and there were several new industrial developments to the south of the CSULB Campus in the vicinity of Alamitos Bay. The City of Long Beach was also heavily developed by 1942; however, the City did not extend east of Pacific Coast Highway. The area where the CSULB campus is now located was still undeveloped, though the channelized tributary of the San Gabriel River, which now runs through the campus, was present in 1942. The topographic map from 1950 shows that the Naval Hospital, now the U.S. Department of Veterans Affairs (VA) Long Beach Healthcare System, had been developed by this time. The Campus was still devoid of any development. The 1950 map also indicates that development within the City of Long Beach had begun to extend west of Pacific Coast Highway. Aside from general increase in developments surrounding the CSULB campus, topographic maps show no significant changes to the campus area of the Project site until 1966. The 1966 map shows that by this time, the City of Long Beach had almost been developed to its current extent. The 1966 map also indicates that development within the CSULB Campus had begun by this time. The majority of developments within the campus in 1966 were concentrated in the southeast corner, and the majority of the campus was still undeveloped, including the Project site. Based on the review of the available topographic maps, the majority of the campus appears to have been developed after 1982.

Historic aerials from 1952 shows the Project site and CSULB campus as undeveloped land, surrounded by residential developments to the north and west, the Naval Hospital (present-day U.S. Department of VA Long Beach Healthcare System) to the south, and open land to the east. The channelized tributary of the San Gabriel River is visible on the 1952 aerial. The aerial from 1953 shows increased residential development to the northeast of the campus and several small buildings in the southeast corner of the campus. There are no other developments within the campus visible on the 1952 aerial. There are no significant changes noticeable on the 1953 aerial. By 1963, residential developments had been developed to the east of the campus. Additionally, in 1963 several new structures occupied the southeastern corner of the campus, a track and field area had been built in the center of the campus, and several parking lots had been built in roughly the same location as the extant Parking Lots E1, E2, G3, G5, G6, and the Pyramid Parking Structure. The 1963 aerial indicates that the Project site was still undeveloped. Between 1963 and 1972 the parking lots in the center of the campus had been expanded greatly and extended to Atherton Street. The 1972 aerial also shows that several new structures had been developed in the southeast corner of the campus. In 1972 the Project site was still undeveloped. The next available aerial dates to 1994 and shows that the campus had been completely developed by this time. The Project site still appears to be primarily open land, as it currently is, but the extant buildings within and surrounding the Project site are visible on the 1994 aerial. Additionally, the 1994 aerial indicates that the parking lot which will be expanded as part of the Project site was developed at this time. The specific area where the new parking lot will be located appears to be a grassy area, which it still is. In the aerials from the late 1990s and the 2000s, the most significant change to the campus, was the development of the multi-level parking structures at lot G13 and G14, along Palo Verde Avenue, to the east of the Project site. There does not appear to be any significant changes to the Project site since 1994.

Geological Setting

The Project site is located in the City of Long Beach and lies within the northernmost Peninsular Ranges Geomorphic Province (Norris and Webb 1990; California Geological Survey 2002). Northwest trending mountain ranges and valleys that extend over 900 miles from the tip of the Baja Peninsula to the Transverse Ranges (i.e. the San Bernardino and San Gabriel Mountains in southern California) characterize this geomorphic province. Regionally, the Peninsular Ranges are bounded to the east by the Colorado Desert and the west by the continental shelf and offshore islands (Santa Catalina, Santa Barbara, San Nicholas, and San Clemente) (Norris and Webb 1990; CGS 2002). Regional mountain ranges in the Peninsular Ranges geomorphic province include the Santa Ana, San Jacinto, and Santa Rosa Mountains. Geologically, these mountains are dominated by Mesozoic, plutonic igneous and metamorphic rocks that are part of the Peninsular Ranges batholith (Southern California batholith) (Jahns 1954).

More specifically, the Project site lies within the boundary of the southwestern and central blocks of the Los Angeles Basin, which coincides with the Newport-Inglewood fault zone (Yerkes et al. 1965). The Los Angeles Basin (also called the coastal plain) extends from the Santa Monica Mountains in the north to the San Joaquin Hills of Orange County in the south and is a structural basin that in some areas has been subsiding and filling with sediments since the late Cretaceous (Yerkes et al. 1965). The Los Angeles Basin is characterized by alluvial coastal plains, underlain by older alluvial and marine sediments, and punctuated by uplifted highlands owing to the numerous faults underlying the Basin. These faults, which include the Newport-Inglewood fault zone (a strike-slip fault zone) in the south and the Sierra Madre fault zone in the north (a reverse fault), are part of the greater San Andreas fault system, characterized by numerous strike-slip faults. The Newport-Inglewood fault zone underlies the Project site.

According to geological mapping by Jennings (1962) at a scale of 1:250,000 and the paleontological records search through the Natural History Museum of Los Angeles County (LACM) (McLeod 2019; Appendix D), the northeast corner of Project site is underlain by Holocene (< 11,700 years ago) alluvium (map unit Qal), and the remainder of the Project site is underlain by Quaternary non-marine terrace deposits (map unit Qt) that are late Pleistocene in age (~ 126,000 years ago – 11,700 years ago). Similarly, more recent and larger-scale (more detailed) mapping of Saucedo et al. (2016) mapped the northeast corner of the Project site as Holocene young alluvium (map unit Qya_2); however, in contrast to geological mapping of Jennings (1962), the southwestern Project site was mapped as Pleistocene, old shallow marine deposits on a wave cut shelf (map unit Qom).

Paleontological Records Search and Literature Review

Dudek requested a paleontological records search through the LACM of the Project site and a 0.5-mile radius buffer on March 08, 2019, and the results were received on March 22, 2019. The records search results indicated that the LACM has no vertebrate fossil localities from within the Project site boundaries; however, they do have two localities within the 0.5-mile radius buffer and several localities from similar deposits west of the Project site and along the coast, west-southwest of the Project (McLeod 2019; Appendix D). LACM 3757, which is the closest vertebrate locality and is situated east of Pacific Coast Highway and south of East 7th Street, yielded fossil specimens of eagle ray (*Myliobatis*), skate (Rhinobatoidea), white shark (*Carcharodon*), blue shark (*Prionace*), requiem shark (Carcharhinidae), surfperch (*Damalichthys*) and (*Rhacochilus*), croaker (*Genyonemus*), pond turtle (*Clemmys*) diving duck (*Chendytes*) loon (*Gavia*), dog (*Canis*), sea otter (*Enhydra*) horse (*Equus*), camel (*Hemiauchenia*) and pocket gopher (*Thomomys*) (McLeod 2019; Appendix D). The next closest locality, LACM 6746, produced a fossil mammoth (*Mammuthus*) at a shallow depth along East 7th Street, west of Pacific Coast Highway. Approximately 1.25 miles due west of the northern Project site boundary, McLeod (2019) reported fossilized camel specimens from 8.5 feet below the ground surface (bgs).

Localities along the coast, west-southwest of the Project site include LACM 2031, LACM 7739, and LACM 1005. LACM 2031 yielded fossil bison (*Bison antiquus*) approximately 25 feet below the bluff surface (McLeod 2019; Appendix D). LACM 7739 produced abundant marine vertebrate fossils from approximately 55 feet bgs. The fossil fauna included specimens of dusky shark (*Carcharhinus*); soupfin shark (*Galeorhinus galeus*); hammerhead shark (*Sphyrna*); leopard shark (*Triakis semifasciata*); horn shark (*Heterodontus francisci*); stingray (*Dasyatis*); eagle ray (*Myliobatis californica*); skate (*Raja*); guitarfish (*Rhinobatos productus*); dogfish (*Squalus acanthias*); angel shark (*Squatina californica*); midshipman (*Porichthys notatus*); cusk-eel (*Chilara taylori*); surfperches (*Cymatogaster aggregate*), (*Damalichthyes*), (*Embiotoca jacksoni*), (*Hyperprosopon argenteum*), (*Micrometrus aurora*), and (*Phanerodon furcatus*); goby (Gobiidae); croaker (*Genyonemus lineatus*); queenfish (*Seriphus politus*); barracuda (*Sphyraena argentea*); sanddabs (*Citharichthys sordidus*) and (*Citharichthys stigmaeus*); sole, (*Glyptocephalus zachirus*), and (*Lyopsetta exilis*); sculpin (Cottidae); rockfish (*Sebastes goodei*); herring (Clupeidae); and undetermined mammal (Mammalia). The final LACM vertebrate fossil locality from Pleistocene deposits, LACM 1005, yielded fossil mammoth (*Mammuthus columbi*) and ground sloth (*Nothrotheriops shastensis*) from approximately 60 feet bgs in the vicinity of Bixby Park (McLeod 2019; Appendix D). The LACM recommended paleontological monitoring of excavations below a depth of five feet in areas underlain by Holocene alluvium, all excavations into areas underlain by Pleistocene deposits, and collection and processing of sediment samples to determine the presence of microvertebrate and microinvertebrate remains.

Past excavations in the vicinity of the Project site have yielded numerous Pleistocene marine invertebrates and vertebrates and terrestrial vertebrates. In his review of Quaternary vertebrates from California, Jefferson (1991) listed dozens of Pleistocene fossil localities from the City of Long Beach and neighboring cities. Some of the taxa recovered from these localities include birds (*Chendytes lawi*), mammoths (*Mammuthus* sp.), mastodons (*Mammut* sp.), camel (Camelidae), bison (*Bison* sp.), sea otter (*Enhydra* sp.), and whale (Cetacea). During a construction project in Signal Hill, approximately four miles northwest of the Project site, a fossil invertebrate fauna from Pleistocene marine deposits was collected and curated with the LACM Invertebrate Paleontology Section (Williams, pers. obs. 2014). The fauna consisted of gastropods (22 species), bivalves (23 species), scaphopods (two species), echinoderms (three species), arthropods (two species), and bryozoans (two species).

Cultural Resources Survey

Methods

Dudek conducted an archaeological pedestrian survey of the Project site on March 13, 2019 and on May 8, 2019, using standard archaeological procedures and techniques. All portions of the Project site with exposed ground surface were inspected. Survey transects were spaced 15 meters wide and oriented northwest-southeast across accessible areas of the Project site. Where transects were not feasible (such as eroding dirt banks, areas covered in dense vegetation, and stockpiled areas) transects were not utilized. Instead, a mixed approach (opportunistic survey) was utilized and reconnaissance survey (visual inspection) was utilized. The goal of the survey was to identify and record any cultural resources within the Project site. The ground surface was examined for the presence of prehistoric artifacts, historical artifacts, sediment discolorations that might indicate the presence of a cultural midden, depressions, and other features that might indicate the former presence of structures or buildings.

All fieldwork was documented using field notes and an Apple Generation 7 iPhone (iPhone) equipped with ESRI Collector and Avenza PDF Maps software with close-scale field maps, and aerial photographs. Location-specific photographs were taken using the iPhone’s 12-megapixel camera. All field notes, photographs, and records related to the current study are on file at Dudek’s Pasadena, California office. All field practices met the Secretary of Interior’s standards and guidelines for a cultural resources inventory.

Results

The Project site is located on a relatively flat landform at the northwestern corner of the CSULB campus. The survey focused on areas of exposed ground surfaces within the Project site (Appendix A: Figures 4 through 10). The majority of the Project site is made up of landscaped areas, characterized by grasses, ornamental shrubbery and trees, and hardscaped areas including remnants of the former sand volleyball court, and extant buildings. As such, exposed ground surface visibility was less than 30 percent. Soils observed within the Project site varied and were present within landscaped areas along the perimeter of the Project site, the landscaped area of the new parking lot, and pockets of exposed soils were observed within the grass-covered open space area, between the HRL Office building and the Isabel Patterson Child Development Center. The soils observed in landscaped areas along the perimeter of the Project site including the new parking lot area, consisted of medium brown to dark brown, fine-grained, clayey-silt to clayey-sandy-silt that is moderately-sorted with inclusion of low-density small-sized sub-angular rocks and gravel on the surface (Appendix A: Figure 11). The landscaped soils observed are from a disturbed context as a result of lawn maintenance and it is unclear at what depth native soils would be present. The soils observed within the grass-covered open space area consisted of imported light brown to tan colored, coarse-grained, silty-sand and sand with gravel following the footprint of the former sand covered volleyball court and is imported non-native soil (Appendix A: Figure 12). Additionally, pockets of sandy-silt similar to the landscaped areas were also observed in the grass-covered open space area. No archaeological materials were identified during the survey.

Summary Sensitivity Analysis

Archaeological Sensitivity

One archaeological site was identified within the Project site through the SCCIC records. This site, CA-LAN-000705, was originally recorded in 1974 as a prehistoric lithic scatter with habitation debris. The site was updated in 1993, when it had been described as being partially damaged by construction, though subsurface components were noted to still present unique research possibilities. No portions of site CA-LAN-000705 were visible during the intensive pedestrian survey of the Project site. A search of the SLF for the Project site and vicinity conducted by the NAHC indicated that the Project site and vicinity is sensitive for the presence of Native American cultural resources. A review of historic aerials and topographic maps indicate that the Project site was initially developed between 1982 and 1994. However, the majority of the Project site is made up of open land, now covered by grasses and other ornamental vegetation and does not appear to have ever been extensively developed. Additionally, this review indicated that there were several natural features, particularly an unnamed creek or tributary running through the area and a wetland to the south, near the Project site, which would have provided important resources to prehistoric peoples. Though no resources were identified during the intensive pedestrian survey, 54 cultural resources have been identified within a 0.5-mile of the CSULB campus, 29 of which have been recorded within or overlapping the campus itself. Forty of the 54 sites identified during the records search are prehistoric or multicomponent sites, suggesting that prehistoric resources may be present in the areas within and surrounding the Project site. Therefore, there is a **moderate to high sensitivity for prehistoric-era archaeological resources** within the Project site. The fact that the Project site was not developed until fairly recently, suggests that the likelihood of encountering historic-era archaeological features, such as foundations, refuse deposits, or structural remnants, is low. Therefore, there is a **low sensitivity for historic-era archaeological resources** within the Project site.

Paleontological Sensitivity

Past excavation activities in the area surrounding the Project site have encountered paleontological resources in Pleistocene alluvial and nearshore marine deposits. Review of the paleontological literature revealed numerous Pleistocene older alluvial and marine fossil vertebrate localities within and surrounding the City of Long Beach. Surficial Holocene alluvial deposits in the northeastern Project site are assigned **low paleontological sensitivity** on the surface increasing to **high** at a relatively shallow depth below the surface where Pleistocene alluvium or nearshore marine deposits are likely to be encountered. The remainder of the Project site is underlain by Pleistocene shallow marine deposits, which have **high paleontological sensitivity** throughout their extent.

Recommendations

Section 3.7 of CSULB’s Final Environmental Impact Report for the Campus Master Plan Update, published in 2008, discusses the potential impact on archaeological resources (CSULB 2008). The analysis, completed by archaeologist Matthew Boxt, found that the Campus Master Plan Update would have a significant impact on archaeological resources. In order to mitigate for these impacts, six mitigation measures were recommended, four of which apply to archaeological resources, one of which applies to human remains, and one of which applies to paleontological resources (see below). With the implementation of these measures, the Project will have a less-than-significant impact on archaeological resources, human remains, and paleontological resources.

Campus Master Plan EIR Mitigation Measures

1. All earth moving construction activity will be monitored by a professional archaeologist and Native American monitor. The archaeological monitor will conduct on-site cultural resources sensitivity training (crew education) as outlined below. If subsurface cultural materials are uncovered, construction work in the immediate vicinity will be halted and the emergency discovery procedures described below will be implemented.

2. Prior to the beginning of the earth moving construction activities (including initial grading of vegetation removal), the construction crew will be informed of the cultural resources values involved and of the regulatory protections afforded those resources. The crew will also be informed of procedures relating to the discovery of unanticipated cultural resources (as outlined below). The crew will be cautioned not to collect artifacts, and asked to inform a construction supervisor and the onsite archaeological monitor in the event that cultural remains are discovered during the course of construction. The onsite archaeological and Native American monitor will administer supplement briefing to all new construction personnel, prior to their commencement of earth moving construction activities.

3. In the event archaeological resources are unearthed during excavation activities associated with the project, work will be stopped immediately, and the discovery will be evaluated by a qualified archeologist, pursuant to the procedures set forth at CEQA Guidelines Section 15064.5.

4. In an event that a previously unknown archaeological resource is discovered and disturbance to such a resource cannot be avoided, a Phase-III, or "data recovery," phase of investigation will be required, pursuant to CEQA Guidelines Sect. 15064.5. The Phase-III study will generally consist of a limited scale program of archaeological excavation, radio-carbon dating of organic materials-such as shell midden and faunal remains, laboratory analysis, and report writing designed to assess the importance of the resource in question. Any resources recovered will be properly curated, as appropriate.

5. If human skeletal remains are found at the project site during earth moving activities such as grading or trenching, work will be suspended and the Los Angeles County Coroner's Office will be notified. Standard guidelines set by California law provides for the treatment of skeletal material of Native American origin (California Public Resources Code, Sections 5097.98 et seq.; Health and Safety Code, Section 7050.5 and others). Procedures to be employed in the treatment of human remains are found in, "A professional Guide for the Preservation and Protection of Native American Remains and Associated Grave Goods," published by the California Native American Heritage Commission.

6. Paleontological resources have not been identified on the CSULB campus; however, if fossilized shells, plants or bones are discovered during construction of an individual project, work will be suspended in the immediate vicinity of the finds, and the potential significance of the resources will be evaluated by a qualified specialist.

Additional Project Paleontological Recommendations

Prior to the commencement of any grading activity, the University should retain a qualified paleontologist to ensure the implementation of a paleontological monitoring program. The Society of Vertebrate Paleontology (SVP, 2010) defines a qualified paleontologist as having:

> "1. A graduate degree in paleontology or geology, and/or a publication record in peer reviewed journals; and demonstrated competence in field techniques, preparation, identification, curation, and reporting in the state or geologic province in which the project occurs. An advanced degree is less important than demonstrated competence and regional experience.
>
> 2. At least two full years professional experience as assistant to a Project Paleontologist with administration and project management experience; supported by a list of projects and referral contacts.
>
> 3. Proficiency in recognizing fossils in the field and determining significance.
>
> 4. Expertise in local geology, stratigraphy, and biostratigraphy.
>
> 5. Experience collecting vertebrate fossils in the field."

The qualified paleontologist should determine where monitoring is required within the Project site based on construction plans and/or geotechnical reports. A paleontological monitor should be onsite during all excavations below a depth of five feet below the ground surface in areas underlain by Holocene alluvium and all excavations into areas underlain by Pleistocene shallow marine deposits. The SVP (2010) defines a qualified paleontological monitor as having:

> "1. BS or BA degree in geology or paleontology and one year experience monitoring in the state or geologic province of the specific project. An associate degree and/or demonstrated experience showing ability to recognize fossils in a biostratigraphic context and recover vertebrate fossils in the field may be substituted for a degree. An undergraduate degree in geology or paleontology is preferable, but is less important than documented experience performing paleontological monitoring, or
>
> 2. AS or AA in geology, paleontology, or biology and demonstrated two years' experience collecting and salvaging fossil materials in the state or geologic province of the specific project, or
>
> 3. Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in the state or geologic province of the specific project.
>
> 4. Monitors must demonstrate proficiency in recognizing various types of fossils, in collection methods, and in other paleontological field techniques."

The paleontological monitor should be equipped with necessary tools for the collection of fossils and associated geological and paleontological data. The monitor should complete daily logs detailing the day's excavation activities and pertinent geological and paleontological data. In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor will temporarily halt and/or divert grading activity to allow recovery of paleontological resources. The area of discovery will be roped off with a 50-foot radius buffer. Once documentation and collection of the find is completed, the monitor will remove the rope and allow grading to recommence in the area of the find.

If appropriate sedimentological indicators (as outlined in SVP [2010]) are encountered, sediment samples should be collected and processed for microvertebrate and microinvertebrate fossils. The amount of sediment collected should follow the SVP (2010) guidelines or an amount determined sufficient by the qualified paleontologist.

Per the SVP (2010) guidelines, after fifty percent of excavations have occurred in a particular geological unit with no fossils found, the qualified paleontologist may reduce monitoring to part-time or spot-checks or terminate the monitoring program.

Following the paleontological monitoring program, a final monitoring report should be submitted to the University for approval. The report should summarize the monitoring program and include geological observations and any paleontological resources recovered during paleontological monitoring for the Project.

Please do not hesitate to contact me if you have any questions about this report. I may be reached via email at lkry@dudek.com or phone at (626) 590-1739, Erica Nicolay at enicolay@dudek.com or via phone at (760) 936-7952, or Michael Williams at mwilliams@dudek.com or via phone at (225) 892-7622.

Respectfully Submitted,

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Att: Appendix A: Figures
Appendix B: Confidential SCCIC Records Search Results
Appendix C: Record of Native American Coordination
Appendix D: Paleontological Resources Records Search Results

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APPENDIX A

Figures

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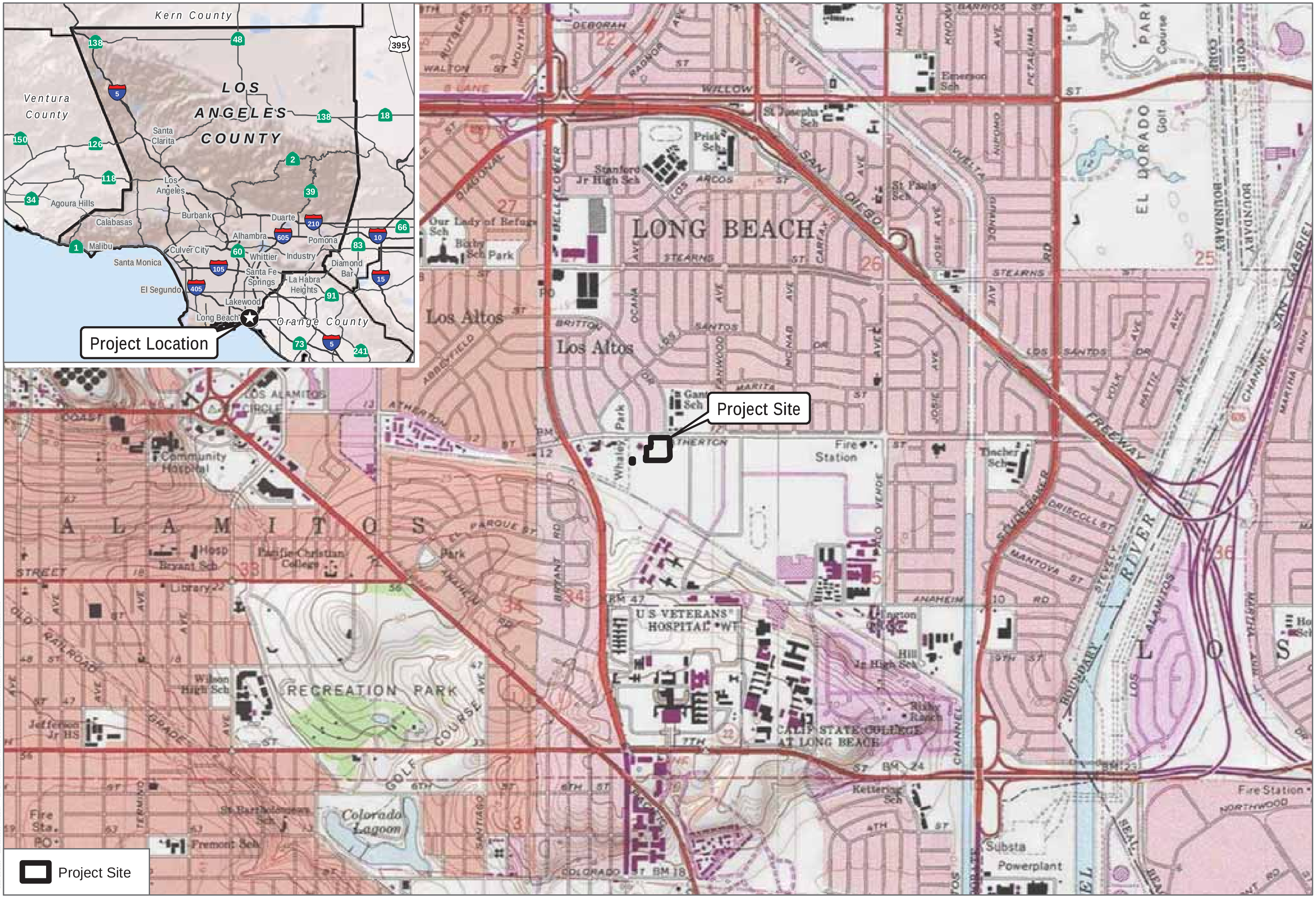
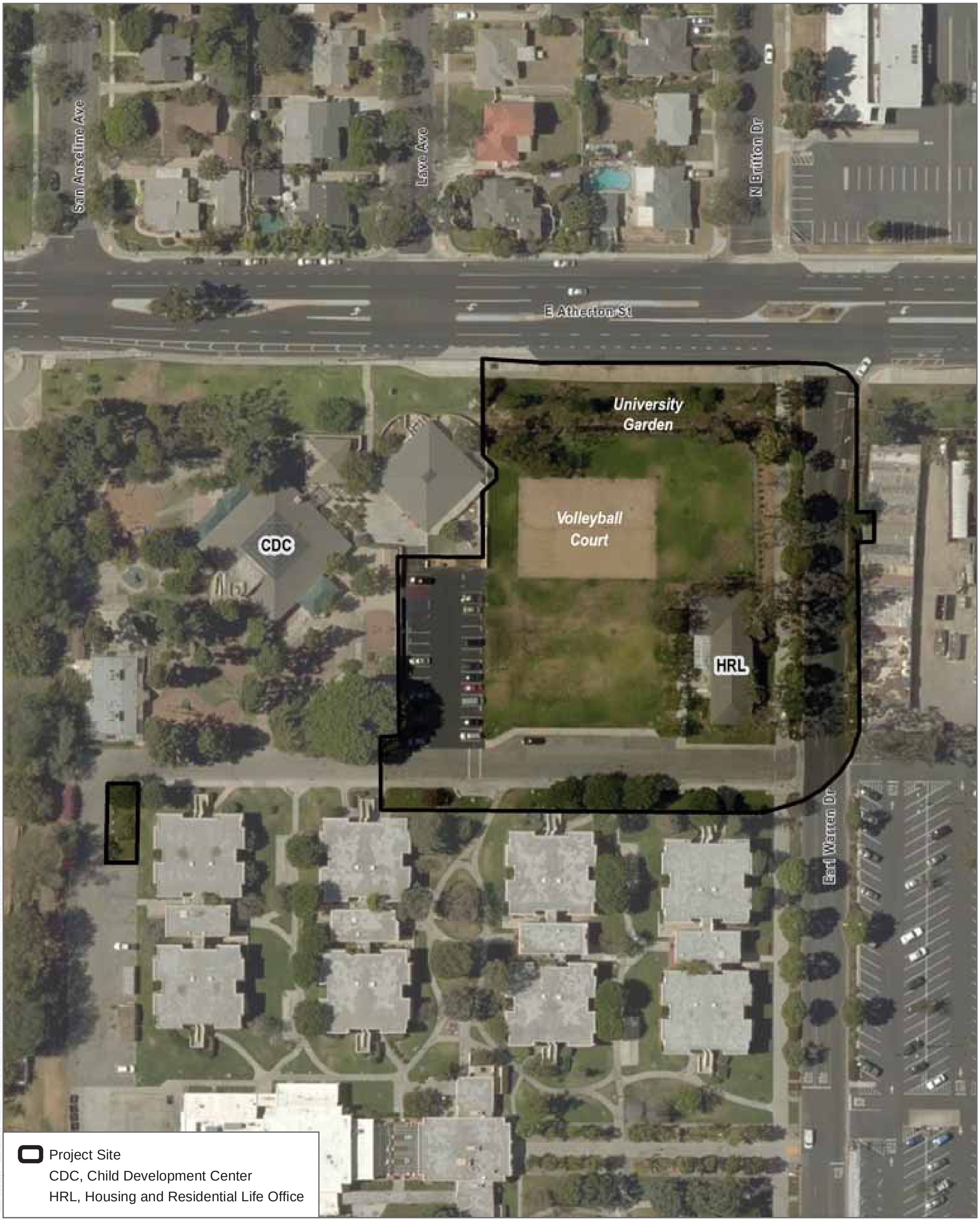


SOURCE: USGS 7.5-Minute Series Los Alamitos Quadrangles
Township 4S, 5S; Range 12W; Sections 2-3, 34-35

DUDEK

0 1,000 2,000 Feet
0 250 500 Meters
1:24,000

FIGURE 1
Project Location
CSULB Housing Extension Project



SOURCE: Bing Maps 2019, Los Angeles County 2011

0 50 100 Feet
0 15 30 Meters
1:1,200

FIGURE 2
Project Site
CSULB Housing Extension Project

SOURCE: Bing Maps 2019

DUDEK

0 100 200 Feet
0 30 60 Meters
1:2,400

FIGURE 3
Project Site and Construction Lay Down Areas
CSULB Housing Extension Project

Figure 4. Landscaping with exposed soils along East Atherton Street taken from the northwest corner of proposed Project site, north of the Isabel Patterson Infant Toddler Center. View to the east.

Figure 5. Landscaping with exposed soils along Earl Warren Drive taken from the northeast corner of proposed Project site. View to the south.

Figure 6. Landscaping with exposed soils along the southern boundary of the proposed Project site. Photo taken of the southeast corner of proposed Project site. View to the northwest.

Figure 7. Landscaping with exposed soils along the western façade of the HRL Office building. Photo taken from the southeast corner of HRL Office building. View to the northeast.

Figure 8. Grass-covered open space with remnant of former sand volleyball court situated. Photo taken from the northwest corner of the open space area between the HRL Office and the Isabel Patterson Child Development Center. View to the south/southeast.

Figure 9. Raised garden beds located immediately north of the HRL Office building. View to the northwest.

Figure 10. Landscaped area of new parking lot located to southwest of the Isabel Patterson Child Development Center. View to the northeast.

Figure 11. Exposed soils observed within landscaped area along East Atherton Street. Plan view.

Figure 12. Exposed soils observed within the open space grass-covered area of the now abandoned sand-covered volleyball court. Plan view.

APPENDIX B

SCCIC Records Search Results - Confidential

This appendix is on file with California State University, Long Beach and is not publicly available, as it provides confidential information about Native American sites, archaeological sites, and/or other historical resources.

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APPENDIX C

Record of Native American Coordination

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Erica Nicolay

From:	Erica Nicolay
Sent:	Wednesday, March 6, 2019 4:33 PM
To:	'NAHC@NAHC'
Cc:	Linda Kry
Subject:	SLF Search and Consultation List Request - CSULB Housing Project 11674
Attachments:	SLF Request- Dudek - 11674.pdf

To whom it may concern,

Please find attached the SLF Search and Consultation List Request for the CSULB Housing Project (11674). The Project site is located in the northwest corner of the CSULB campus in the City of Long Beach, California. The CSULB campus encompasses 322 acres and is located 3 miles from the Pacific Ocean. The campus is bounded by East Atherton Street to the north, Palo Verde Avenue to the east, East 7th Street to the south, and Bellflower Boulevard to the west. The project would consist of demolition of the existing building on the site and construction of a 3- and 4-story residential building with 476 student beds. The building would be 136,317 gross square feet.

If you have any comments or concerns please contact me,

Erica Nicolay, MA
Archaeologist

DUDEK
38 North Marengo Avenue
Pasadena, California 91101
O: 626.204.9830
C: 760.936.7952
Ext. 5230
www.dudek.com

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95501
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: CSULB Housing Expansion Project (11674)

County: Los Angeles

USGS Quadrangle
Name: Los Alamitos

Township: 4S, 5S Range: 12W Section(s): 2, 3, 34, 35

Company/Firm/Agency:
Dudek

Contact Person: Erica Nicolay

Street Address: 38 North Marengo Avenue

City: Pasadena Zip: 91101

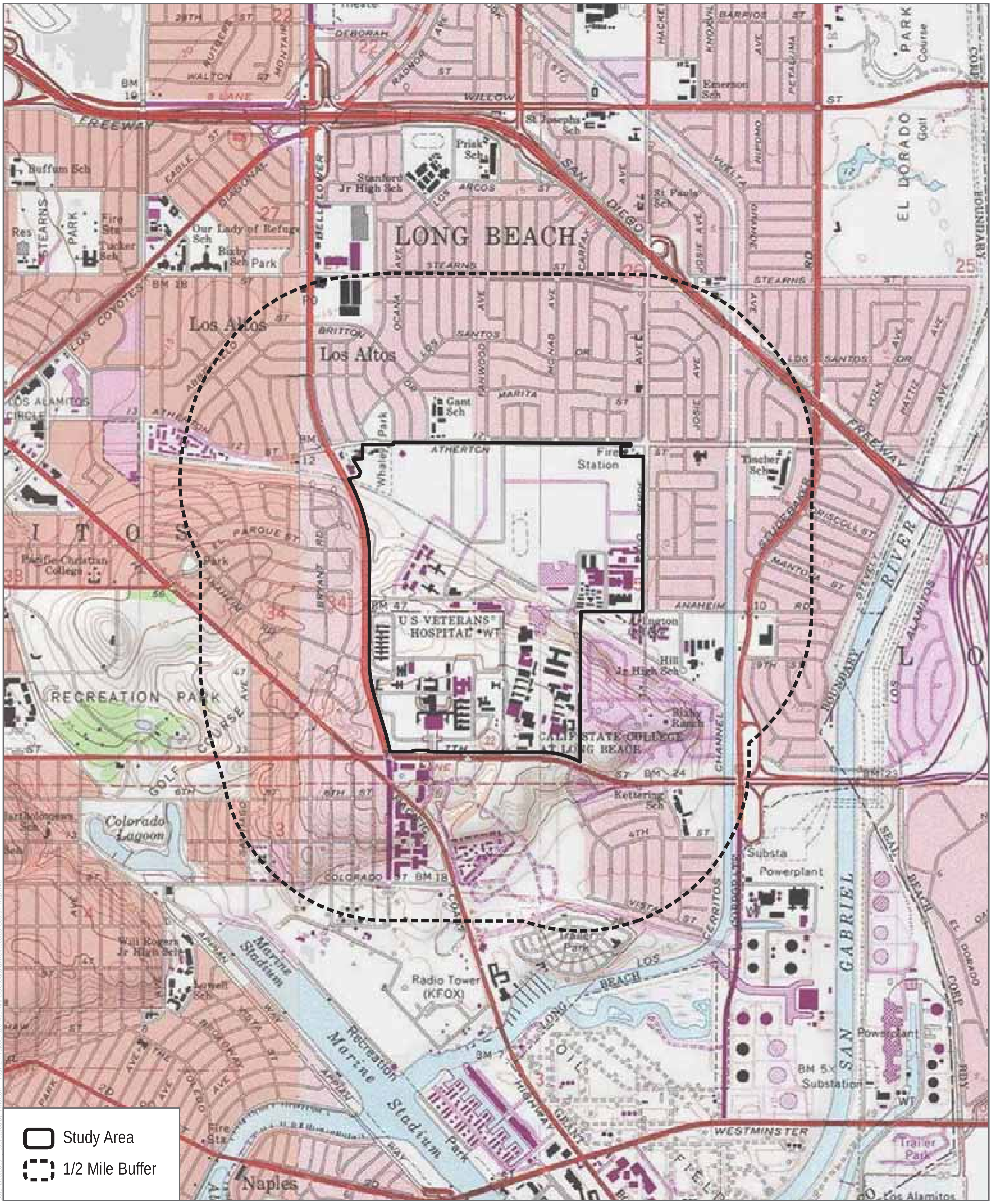
Phone: (760) 936-7952 Extension: N/A

Fax: (760) 632-0164

Email: enicolay@dudek.com

Project Description:
The Project site is located in the northwest corner of the CSULB campus in the City of Long Beach, California. The CSULB campus encompasses 322 acres and is located 3 miles from the Pacific Ocean. The campus is bounded by East Atherton Street to the north, Palo Verde Avenue to the east, East 7th Street to the south, and Bellflower Boulevard to the west. The project would consist of demolition of the existing building on the site and construction of a 3- and 4-story residential building with 476 student beds. The building would be 136,317 gross square feet.

☑ Project Location Map is attached



SOURCE: SOURCE: USGS 7.5-Minute Series Los Alamitos & Long Beach Quadrangles
Township 5S, 4S; Range 12W; Sections 2, 3, 26, 27, 34, 35

DUDEK

0 1,000 2,000 Feet
0 250 500 Meters
1:24,000

Records Search

CSULB Housing Extension Project

Erica Nicolay

From: Quinn, Steven@NAHC <Steven.Quinn@nahc.ca.gov>
Sent: Thursday, March 14, 2019 8:56 AM
To: Erica Nicolay
Subject: CSULB Housing Expansion Project, Los Angeles County
Attachments: SLFAllCSULBHousing 3.14.2019.pdf; CSULBHousing 3.14.2019.pdf

Good Morning,

Attached is the response to the project referenced above. If you have any additional questions, please feel free to contact our office email at nahc@nahc.ca.gov.

Regards,

Steven Quinn
Native American Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Steven.Quinn@nahc.ca.gov
Direct Line: (916) 573-1033
Office: (916) 373-3710

STATE OF CALIFORNIA **Gavin Newsom, Governor**
NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov
Twitter: @CA_NAHC

March 14, 2019

Erica Nicolay
Dudek

VIA Email to: enicolay@dudek.com

RE: CSULB Housing Expansion Project, Los Angeles County

Dear Ms. Nicolay:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were positive. Please contact the tribes on the attached list for more information. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify the NAHC. With your assistance, we can assure that our lists contain current information. If you have any questions or need additional information, please contact me at my email address: steven.quinn@nahc.ca.gov.

Sincerely,

Steven Quinn

Steven Quinn
Associate Governmental Program Analyst

Attachment

Native American Heritage Commission
Native American Contact List
Los Angeles County
3/14/2019

Gabrieleno Band of Mission Indians - Kizh Nation Andrew Salas, Chairperson P.O. Box 393 Covina, CA, 91723 Phone: (626) 926 - 4131 admin@gabrielenoindians.org	Gabrieleno
Gabrieleno/Tongva San Gabriel Band of Mission Indians Anthony Morales, Chairperson P.O. Box 693 San Gabriel, CA, 91778 Phone: (626) 483 - 3564 Fax: (626) 286-1262 GTTribalcouncil@aol.com	Gabrieleno
Gabrielino /Tongva Nation Sandonne Goad, Chairperson 106 1/2 Judge John Aiso St., #231 Los Angeles, CA, 90012 Phone: (951) 807 - 0479 sgoad@gabrielino-tongva.com	Gabrielino
Gabrielino Tongva Indians of California Tribal Council Robert Dorame, Chairperson P.O. Box 490 Bellflower, CA, 90707 Phone: (562) 761 - 6417 Fax: (562) 761-6417 gtongva@gmail.com	Gabrielino
Gabrielino-Tongva Tribe Charles Alvarez, 23454 Vanowen Street West Hills, CA, 91307 Phone: (310) 403 - 6048 roadkingcharles@aol.com	Gabrielino

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 Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources assessment for the proposed CSULB Housing Expansion Project, Los Angeles County.

38 NORTH MARENGO AVENUE
PASADENA, CALIFORNIA 91101
T 626.204.9800 F 626.204.9834

May 1, 2019 11674

Mr. Charles Alvarez, Councilman
Gabrieleno Tongva Tribe
23454 Vanowen St.
West Hills, CA 91307

Subject: CSULB Housing Expansion Phase I Project, City of Long Beach, Los Angeles County, California

Dear Mr. Alvarez:

Dudek has been retained by the California State University, Long Beach (CSULB) in support of the proposed Housing Expansion Phase I Project (Project). The proposed Project would consist of demolition of an existing, approximately 3,800-gross square foot (GSF) building and construction of a new, three to four story, approximately 136,000- GSF residential building. The new student housing building would provide between 476 new student beds. The building would be three stories on the north side along East Atherton Street, stepping back to four stories on the south side along the unnamed access road.

The proposed Project site is bounded by East Atherton Street to the north, the on-campus recycling center to the east, on-campus residence halls to the south, and an on-campus daycare facility—the Isabel Patterson Child Development Center—to the west. Earl Warren Drive traverses the easternmost portion of the site and an unnamed access road traverses the southernmost portion. Specifically the Project is within Sections 2, 3, 34, and 35 of Township 4 and 5 South, Range 12 West, as shown on the *Los Alamitos* USGS Quadrangle (see attached map).

A California Historical Resources Information System (CHRIS) records search was completed at the South Central Information Center for the proposed Project site and a half-mile radius records search buffer. A total of 55 previously recorded cultural resources have been documented within a half-mile of the proposed Project site. Twenty-nine of these resources have been recorded within the CSULB campus and one of these resources overlaps the proposed Project site (CA-LAN-000705). Site CA-LAN-705 is a multicomponent site consisting of a refuse deposit, lithic scatter, shell midden and habitation debris. It was originally recorded in 1974 and updated in 1993 when it was reported to have been damaged. The remaining 54 resources identified during the records search include 39 prehistoric sites, one multicomponent site, one historic site, one historic building with an associated site, and 11 historic buildings. An intensive pedestrian survey of the proposed

Project site was conducted on March 8, 2019. No cultural resources were identified during the survey.

Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project site. The NAHC emailed a response on February 14, 2019, stating that the result of the SLF search was positive, though they did not indicate whether any Native American cultural resources had been identified within the proposed Project site.

The NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by the proposed Project. If you have any knowledge of cultural resources that may exist within or near the proposed Project site, please contact me directly at the phone number listed below, enicolay@dudek.com, or at 38 North Marengo Avenue, Pasadena, CA, 91101 within 30 days of receipt of this letter.

Please note that the request herein is for informational purposes only and does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. All information provided will be included in the cultural study.

Thank you for your assistance.

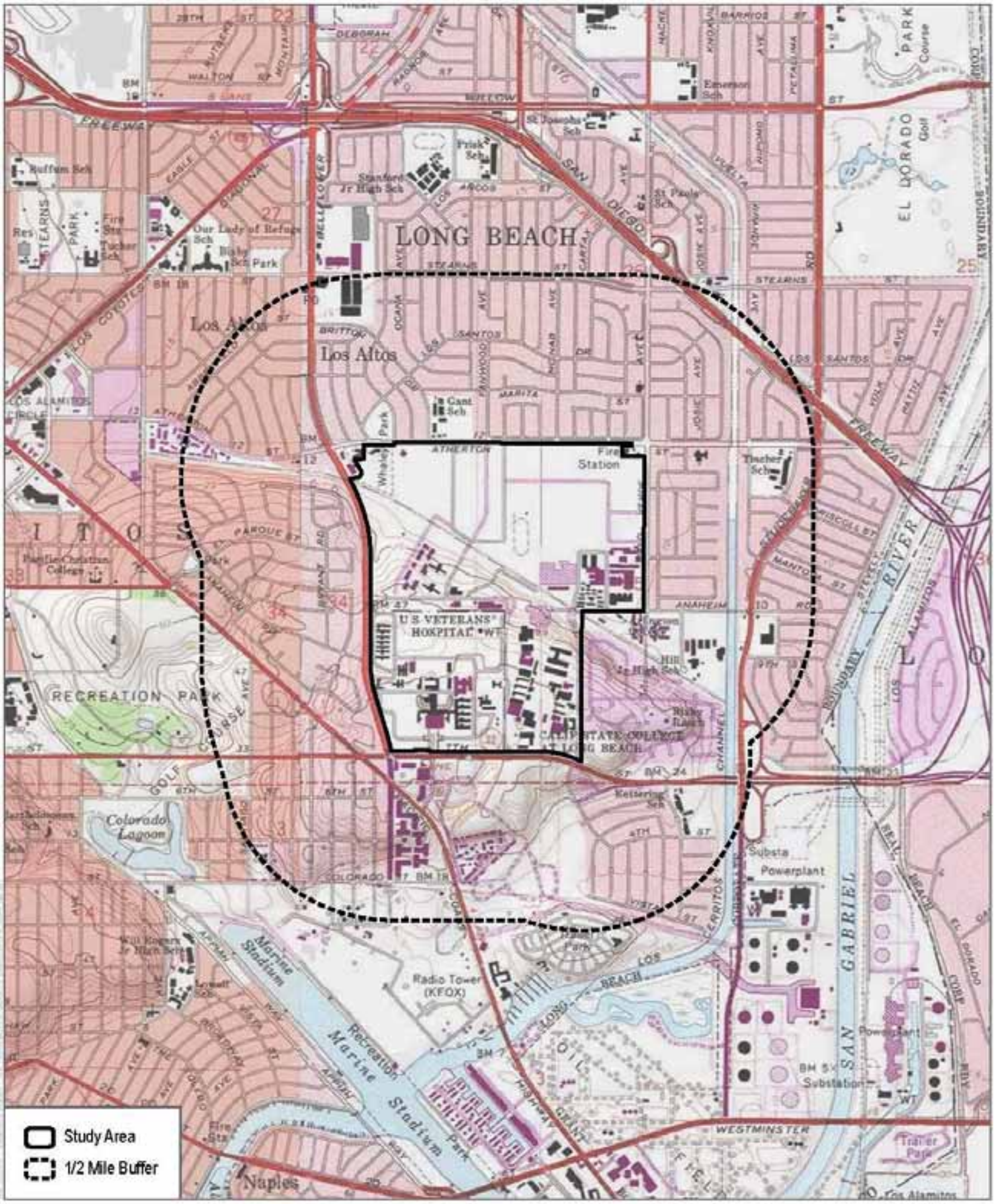
Sincerely,

E. Nicolay

Erica Nicolay, MA
Archaeologist

DUDEK
Cell: 760.936.7952

Attachments: Figure 1



SOURCE: SOURCE: USGS 7.5-Minute Series Los Alamitos & Long Beach Quadrangles
Township 5S, 4S, Range 12W, Sections 2, 3, 26, 27, 34, 35

DUDEK

Records Search
CSULB Housing Extension Project

38 NORTH MARENGO AVENUE
PASADENA, CALIFORNIA 91101
T 626.204.9800 F 626.204.9834

May 1, 2019 11674

Mr. Robert F. Dorame, Tribal Chair/Cultural Resources
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Subject: CSULB Housing Expansion Phase I Project, City of Long Beach, Los Angeles County, California

Dear Mr. Dorame:

Dudek has been retained by the California State University, Long Beach (CSULB) in support of the proposed Housing Expansion Phase I Project (Project). The proposed Project would consist of demolition of an existing, approximately 3,800-gross square foot (GSF) building and construction of a new, three to four story, approximately 136,000- GSF residential building. The new student housing building would provide between 476 new student beds. The building would be three stories on the north side along East Atherton Street, stepping back to four stories on the south side along the unnamed access road.

The proposed Project site is bounded by East Atherton Street to the north, the on-campus recycling center to the east, on-campus residence halls to the south, and an on-campus daycare facility—the Isabel Patterson Child Development Center—to the west. Earl Warren Drive traverses the easternmost portion of the site and an unnamed access road traverses the southernmost portion. Specifically the Project is within Sections 2, 3, 34, and 35 of Township 4 and 5 South, Range 12 West, as shown on the *Los Alamitos* USGS Quadrangle (see attached map).

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Project site was conducted on March 8, 2019. No cultural resources were identified during the survey.

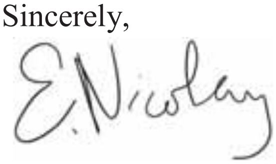
Dudek contacted the California Native American Heritage Commission (NAHC) to request a Sacred Lands File (SLF) search and a list of Native American individuals and/or tribal organizations who may have knowledge of cultural resources in or near the proposed Project site. The NAHC emailed a response on February 14, 2019, stating that the result of the SLF search was positive, though they did not indicate whether any Native American cultural resources had been identified within the proposed Project site.

The NAHC recommended that we contact you regarding your knowledge of the presence of cultural resources that may be impacted by the proposed Project. If you have any knowledge of cultural resources that may exist within or near the proposed Project site, please contact me directly at the phone number listed below, enicolay@dudek.com, or at 38 North Marengo Avenue, Pasadena, CA, 91101 within 30 days of receipt of this letter.

Please note that the request herein is for informational purposes only and does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. All information provided will be included in the cultural study.

Thank you for your assistance.

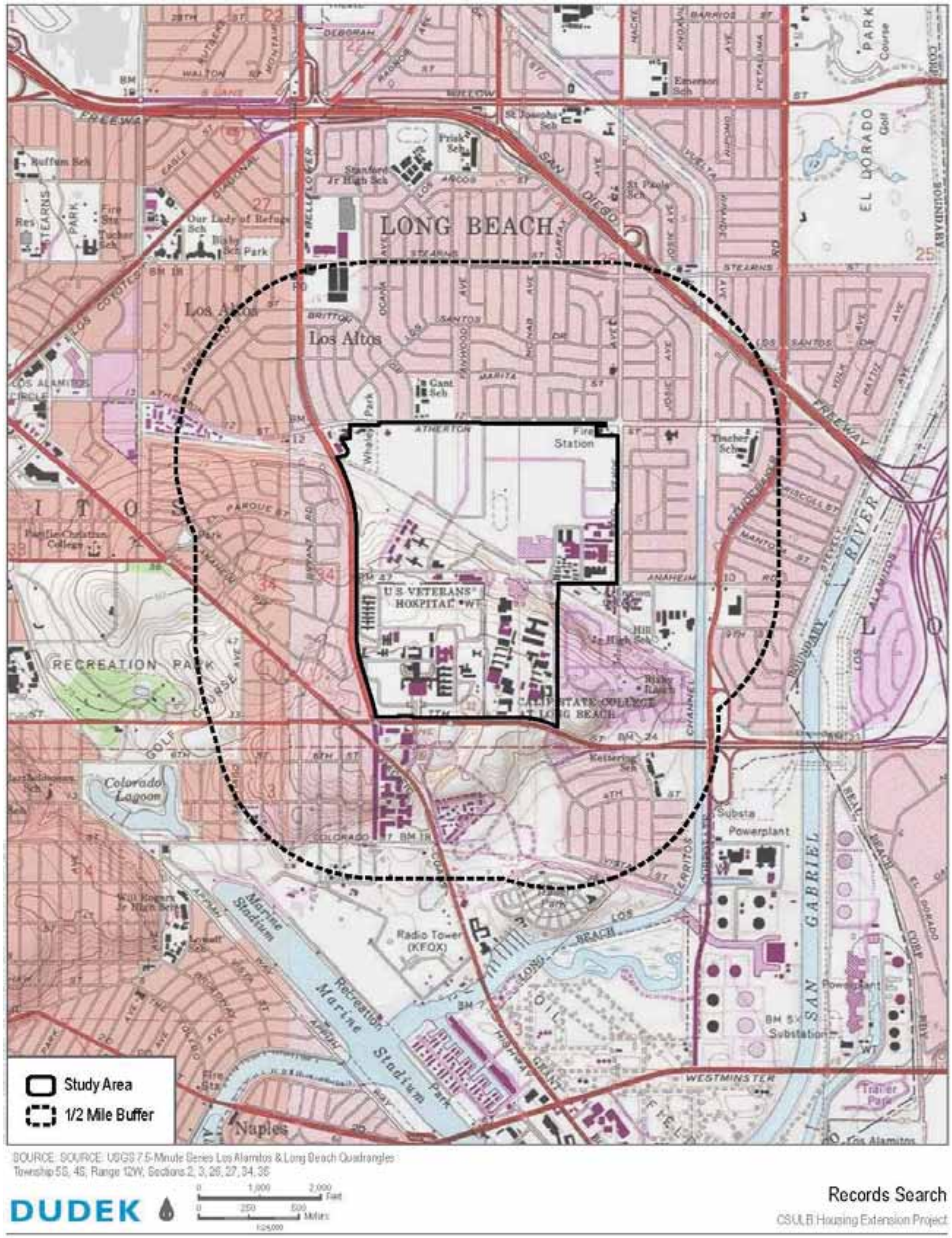
Sincerely,



Erica Nicolay, MA
Archaeologist

DUDEK
Cell: 760.936.7952

Attachments: Figure 1


Study Area
1/2 Mile Buffer
SOURCE: SOURCE: USGS 7.5-Minute Series Los Alamitos & Long Beach Quadrangles
Township 5S, 4S, Range 12W, Sections 2, 3, 26, 27, 34, 35
DUDEK
Records Search
CSULB Housing Extension Project

38 NORTH MARENGO AVENUE
PASADENA, CALIFORNIA 91101
T 626.204.9800 F 626.204.9834

May 1, 2019 11674

Ms. Sandonne Goad, Chairperson
Gabrielino-Tongva Nation
106 1/2 Judge John Aiso St.
Los Angeles, CA 90012

Subject: CSULB Housing Expansion Phase I Project, City of Long Beach, Los Angeles County, California

Dear Ms. Goad:

Dudek has been retained by the California State University, Long Beach (CSULB) in support of the proposed Housing Expansion Phase I Project (Project). The proposed Project would consist of demolition of an existing, approximately 3,800-gross square foot (GSF) building and construction of a new, three to four story, approximately 136,000- GSF residential building. The new student housing building would provide between 476 new student beds. The building would be three stories on the north side along East Atherton Street, stepping back to four stories on the south side along the unnamed access road.

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Thank you for your assistance.

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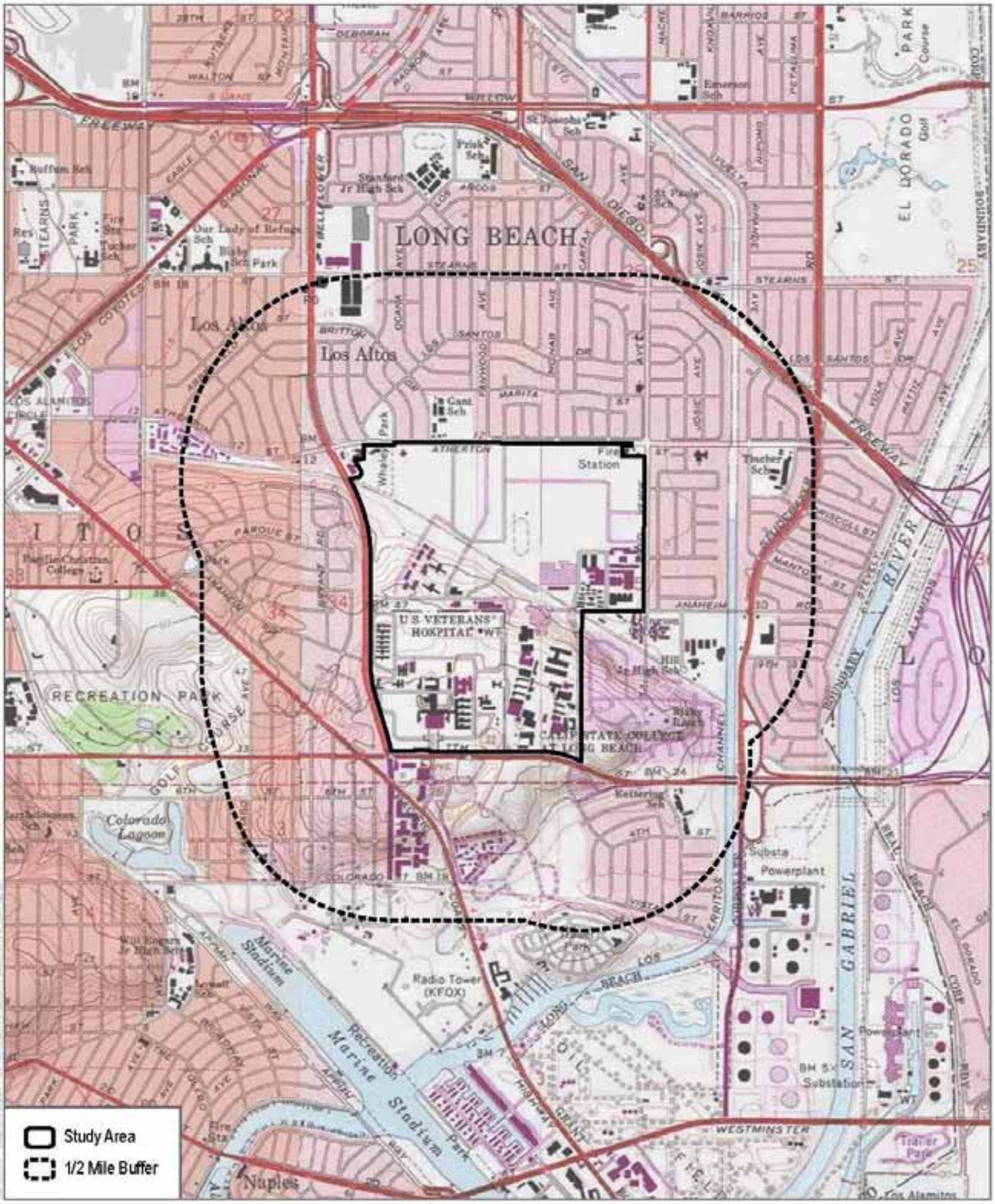
E. Nicolay

____

Erica Nicolay, MA
Archaeologist

DUDEK
Cell: 760.936.7952

Attachments: Figure 1



SOURCE: SOURCE: USGS 7.5-Minute Series Los Alamitos & Long Beach Quadrangles
Township 5S, 4S, Range 12W, Sections 2, 3, 26, 27, 34, 35

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0 250 500 Meters
1:24,000

Records Search
CSULB Housing Extension Project

38 NORTH MARENGO AVENUE
PASADENA, CALIFORNIA 91101
T 626.204.9800 F 626.204.9834

May 1, 2019 11674

Mr. Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Subject: CSULB Housing Expansion Phase I Project, City of Long Beach, Los Angeles County, California

Dear Mr. Morales:

Dudek has been retained by the California State University, Long Beach (CSULB) in support of the proposed Housing Expansion Phase I Project (Project). The proposed Project would consist of demolition of an existing, approximately 3,800-gross square foot (GSF) building and construction of a new, three to four story, approximately 136,000- GSF residential building. The new student housing building would provide between 476 new student beds. The building would be three stories on the north side along East Atherton Street, stepping back to four stories on the south side along the unnamed access road.

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Thank you for your assistance.

Sincerely,

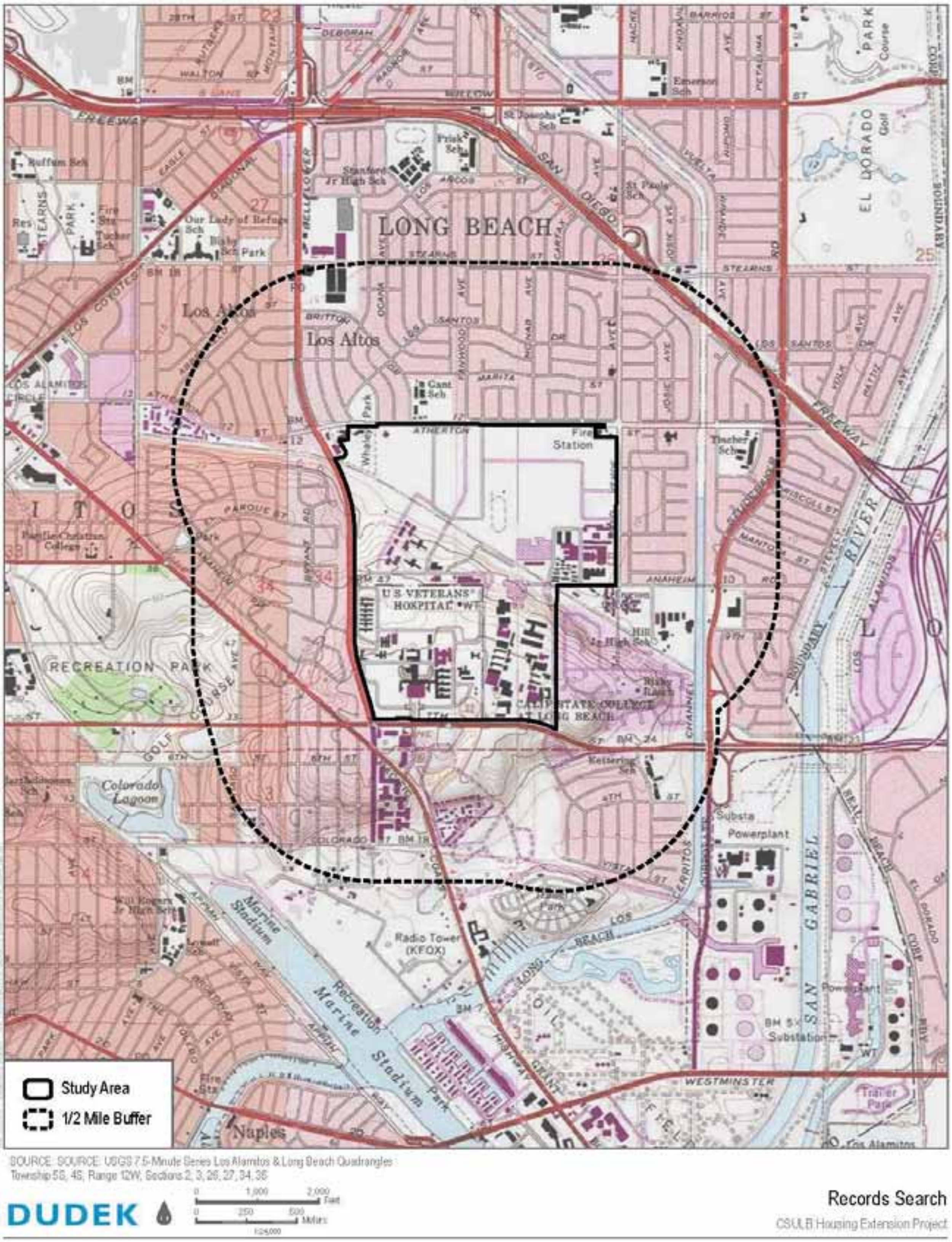
E. Nicolay

____

Erica Nicolay, MA
Archaeologist

DUDEK
Cell: 760.936.7952

Attachments: *Figure 1*


Study Area
1/2 Mile Buffer
LONG BEACH
Los Altos
U.S. VETERANS HOSPITAL
RECREATION PARK
Colorado Lagoon
Marine Stadium
Radio Tower (KFOX)
Powerplant
Naples
SOURCE: SOURCE: USGS 7.5-Minute Series Los Alamitos & Long Beach Quadrangles
Township 5S, 4S, Range 12W, Sections 2, 3, 26, 27, 34, 35
DUDEK
Records Search
CSULB Housing Extension Project

38 NORTH MARENGO AVENUE
PASADENA, CALIFORNIA 91101
T 626.204.9800 F 626.204.9834

May 1, 2019 11674

Mr. Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians
P.O. Box 393
Covina, CA 91723

Subject: CSULB Housing Expansion Phase I Project, City of Long Beach, Los Angeles County, California

Dear Mr. Salas:

Dudek has been retained by the California State University, Long Beach (CSULB) in support of the proposed Housing Expansion Phase I Project (Project). The proposed Project would consist of demolition of an existing, approximately 3,800-gross square foot (GSF) building and construction of a new, three to four story, approximately 136,000- GSF residential building. The new student housing building would provide between 476 new student beds. The building would be three stories on the north side along East Atherton Street, stepping back to four stories on the south side along the unnamed access road.

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Please note that the request herein is for informational purposes only and does not constitute Assembly Bill (AB) 52 notification or initiation of consultation. All information provided will be included in the cultural study.

Thank you for your assistance.

Sincerely,

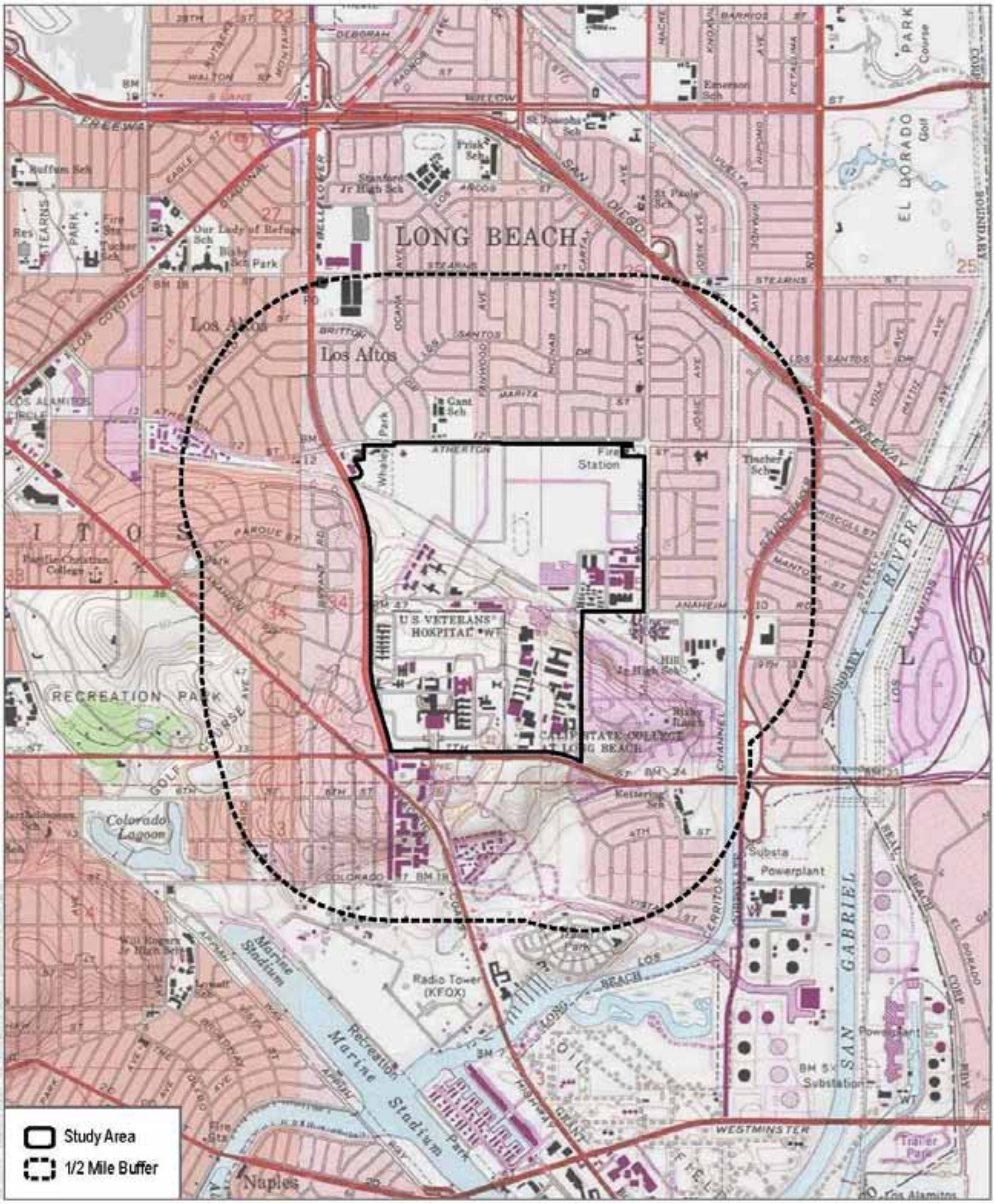
E. Nicolay

____

Erica Nicolay, MA
Archaeologist

DUDEK
Cell: 760.936.7952

Attachments: Figure 1



SOURCE: SOURCE: USGS 7.5-Minute Series Los Alamitos & Long Beach Quadrangles
Township 5S, 4S, Range 12W, Sections 2, 3, 26, 27, 34, 35

DUDEK

Records Search
CSULB Housing Extension Project

SENDER: COMPLETE THIS SECTION

- Complete items 1, 2, and 3.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Robert F. Dorame

Gabrielino Tong a Indians of California Tribal Council

P.O. Box 490
Bellflower, CA 90707

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PS Form 3811, July 2015 PSN 7530-02-000-9053

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1. Article Addressed to:

Anthony Morales

Gabrieleno/Tongva San Gabriel Band of Mission Indians

P.O. Box 693
San Gabriel, CA 91778

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1. Article Addressed to:

Andrew Salas

Gabrieleno Band of Mission Indians

P.O. Box 393
Covina, CA 91723

9590 9402 4591 8278 8849 36

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- Print your name and address on the reverse so that we can return the card to you.
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1. Article Addressed to:

Sandonne Goad

Gabrielino-Tongva Nation

106 1/2 Judge John Also St.
Los Angeles, CA 90012

9590 9402 4591 8278 8849 05

2. Article Number (Transfer from service label)

7018 1830 0000 8047 1552

PS Form 3811, July 2015 PSN 7530-02-000-9053

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B. Received by (Printed Name) B. Anderson C. Date of Delivery 5/3/19

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1. Article Addressed to:

Andrew Salas

Gabrieleno Band of Mission Indians

P.O. Box 393
Covina, CA 91723

9590 9402 4591 8278 8848 82

2. Article Number (Transfer from service label)

7018 1830 0000 8047 1576

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Sandonne Goad - 11674
Gabrielino-Tongva Nation
Street and Apt.
106 1/2 Judge John Also St.
City, State, ZIP
Los Angeles, CA 90012

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☐ Certified Mail Restricted Delivery $
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☐ Adult Signature Restricted Delivery $
Postage
$ .50
Total Postage and Fees
$ 6.80

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Robert F. Dorame -11674
Gabrielino Tongva Indians of California
Tribal Council
Street and Apt. No.
P.O. Box 490
City, State, ZIP+4
Bellflower, CA 90707

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☐ Adult Signature Restricted Delivery $
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$
Total Postage and Fees
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Sent To
Anthony Morales – 11674
Gabrieleno/Tongva San Gabriel Band of
Mission Indians
Street and Apt.
P.O. Box 693
City, State, ZIP
San Gabriel, CA 91778

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☐ Return Receipt (electronic) $
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☐ Adult Signature Restricted Delivery $
Postage
$
Total Postage
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Postmark
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Sent To
Charles Alvarez - 11674
Gabrieleno Tongva Tribe
Street and Apt.
23454 Vanowen St.
City, State, ZIP
West Hills, CA 91307

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Erica Nicolay

From: Administration Gabrieleno <admin@gabrielenoindians.org>
Sent: Friday, May 10, 2019 10:21 AM
To: Erica Nicolay
Subject: CSULB Housing Expansion Phase 1 Project city of Long Beach Los Angeles County

Dear Erica,

Thank you for your letter dated May 1,2019. If there will be any type of ground disturbance taking place regarding the above project our Tribal government would like to set up government to government consultation with the lead agency. Can you please provide the lead agency's contact information.
Thank you

Sincerely,

Brandy Salas

Admin Specialist
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
Office: 844-390-0787
website: www.gabrielenoindians.org

Attachments area

APPENDIX D

LACM Paleontological Records Search Results

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DUDEK

March 08, 2019 11674.0001

Samuel A. McLeod, Ph.D.
Natural History Museum of Los Angeles County

Subject: ***Paleontological Record Search Request, California State University Long Beach Housing Expansion Phase 1 Project, City of Long Beach, Los Angeles County, California***

Dear Sam,

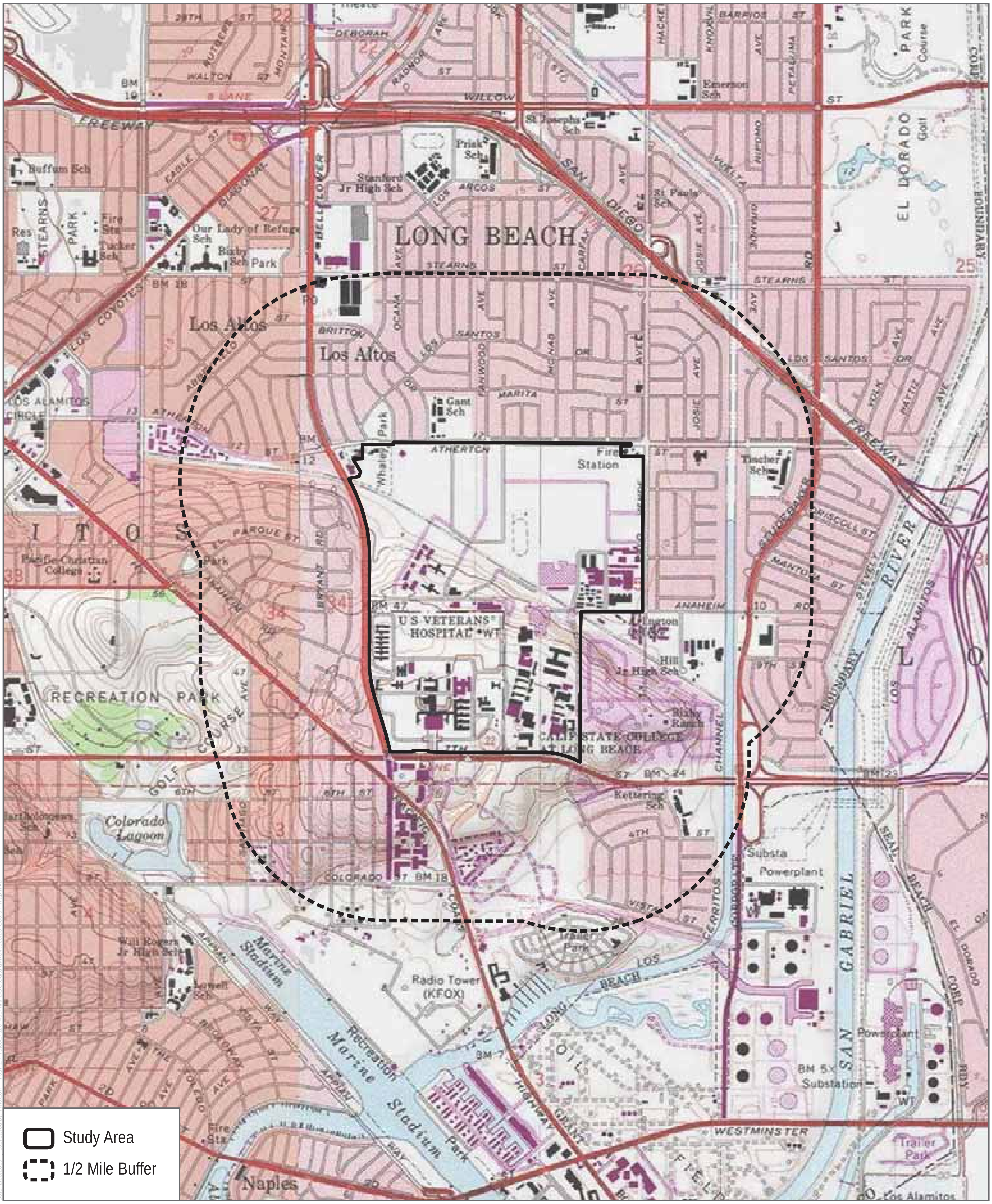
The California State University Long Beach (Client) retained Dudek to conduct a cultural and paleontological resources study in support of the California State University Long Beach Housing Expansion Phase 1 Project (proposed project) to determine whether the proposed project will encroach on previously investigated fossil localities. The Client for the proposed project is requesting a review of the paleontological localities maintained by your office.

To facilitate the review, I have attached a map with the proposed project location and a one-half mile radius buffer (Base maps: Los Alamitos and Long Beach 7.5′ Topographic Quadrangles). Please conduct a review of the proposed project area and provide a list of fossil localities within or nearby the proposed project boundaries. An invoice may be sent to my attention, Mike Williams (mwilliams@dudek.com) or Sarah Siren (ssiren@dudek.com), at your earliest convenience.

Thank you and if I can be of further assistance, please call or email me.

Sincerely,

Michael Williams, Ph.D.
Paleontologist
Dudek
(225) 892-7622
mwilliams@dudek.com



SOURCE: SOURCE: USGS 7.5-Minute Series Los Alamitos & Long Beach Quadrangles
Township 5S, 4S; Range 12W; Sections 2, 3, 26, 27, 34, 35

DUDEK

0 1,000 2,000 Feet
0 250 500 Meters
1:24,000

Records Search

CSULB Housing Extension Project

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325

e-mail: smcleod@nhm.org

22 March 2019

Dudek
605 Third Street
Encinitas, CA 92024

Attn: Michael Williams, Ph.D., Senior Paleontologist

re: Vertebrate Paleontology Records Check for paleontological resources for the proposed California State University Long Beach Housing Expansion Phase 1 Project, Dudek Project # 11678.0001, in the City of Long Beach, Los Angeles County, project area

Dear Michael:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed California State University Long Beach Housing Expansion Phase 1 Project, Dudek Project # 11678.0001, in the City of Long Beach, Los Angeles County, project area as outlined on the portion of the Los Alamitos USGS topographic quadrangle map that you sent to me via e-mail on 8 March 2019. We do not have any vertebrate fossil localities that lie directly within the proposed project area boundaries, but we do have localities nearby that occur in sedimentary deposits similar to those that occur in the proposed project area, either at the surface or at depth.

In the smaller northeastern portion of the proposed project area there are surface deposits of younger Quaternary Alluvium, derived from the San Gabriel River that currently flows in a concrete channel just to the east. These deposits are unlikely to contain significant vertebrate fossils, at least in the uppermost layers. In most of the proposed project area, the southwestern portion, the surface deposits consist of older Quaternary Alluvium, derived from the San Gabriel River as well as possibly lagoonal and beach deposits. These older Quaternary deposits probably occur at modest depth in the rest of the proposed project area also. Our closest vertebrate fossil locality from these older Quaternary deposits, LACM 3757, occurs just south of the proposed project area east of the Pacific Coast Highway and south of 7th Street. Locality LACM 3757 produced fossil specimens of eagle ray, *Myliobatis,* skate, Rhinobatoidea, white shark, *Carcharodon*, blue shark, *Prionace*, requiem shark, Carcharhinidae, surfperch, *Damalichthys* and *Rhacochilus*, croaker, *Genyonemus*, pond turtle, *Clemmys*, diving duck, *Chendytes*, loon, *Gavia*, dog, *Canis*, sea otter, *Enhydra*, horse, *Equus*, camel, *Hemiauchenia*, and pocket gopher, *Thomomys*. Directly west of the southern boundary of the proposed project area, along 7th Street west of the Pacific Coast Highway, our older Quaternary locality LACM 6746 produced a fossil specimen of mammoth, *Mammuthus*, at shallow but unstated depth. Directly west of the northern boundary of the proposed project area, near the intersection of Grand Avenue and the Pacific Coast Highway, our older Quaternary locality LACM 7393 produced a fossil specimens of camel, Camelidae, at a depth of 8.5 feet below the surface.

West-southwest of the proposed project area we have vertebrate fossil localities near or on the beach. Near the intersection of Grand Avenue and East Livingston Drive, locality LACM 2031 produced specimens of fossil bison, *Bison antiquus*, at about 25 feet from the top of the bluff. A little further west, between the parking lot and the beach at Bluff Park at a depth of about 55 feet below the surface, our older Quaternary locality LACM 7739 produced a diverse suite of marine vertebrate fossils including dusky shark, *Carcharhinus*, soupfin shark, *Galeorhinus galeus*, hammerhead shark, *Sphyrna*, leopard shark, *Triakis semifasciata*, horn shark, *Heterodontus francisci*, stingray, *Dasyatis*, eagle ray, *Myliobatis californica*, skate, *Raja*, guitarfish, *Rhinobatos productus*, dogfish, *Squalus acanthias*, angel shark, *Squatina californica*, midshipman, *Porichthys notatus*, cusk-eel, *Chilara taylori*, surfperches, *Cymatogaster aggregata*, *Damalichthyes*, *Embiotoca jacksoni*, *Hyperprosopon argenteum*, *Micrometrus aurora*, and *Phanerodon furcatus*, goby, Gobiidae, croaker, *Genyonemus lineatus*, queenfish, *Seriphus politus*, barracuda, *Sphyraena argentea*, sanddabs, *Citharichthys sordidus*, *Citharichthys stigmaeus*, sole, *Glyptocephalus zachirus*, *Lyopsetta exilis*, sculpin, Cottidae, rockfish, *Sebastes goodei*, herring, Clupeidae, and undetermined mammal, Mammalia. Just northwest of locality LACM 7739 we have another locality, LACM 1005, opposite Bixby Park at approximately 17th Place, that produced specimens of fossil mammoth, *Mammuthus columbi*, and ground sloth, *Nothrotheriops shastensis*, at a depth of approximately 60 feet below the surface.

Shallow excavations in the younger Quaternary Alluvium exposed in the northeastern portion of the proposed project area probably will not uncover significant vertebrate fossil remains. Excavations there that extend down below about five feet, however, as well as any excavations in the exposures of older Quaternary Alluvium in the southwestern portion of the proposed project area, may well encounter significant fossil vertebrate specimens. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Sediment samples from the proposed project area should also be collected and processed to determine the small fossil potential of the site. 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: invoice

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Appendix C

Historic Evaluation

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HISTORICAL RESOURCE EVALUATION REPORT FOR THE HOUSING EXPANSION PHASE I – PARKSIDE NORTH HOUSING PROJECT, CALIFORNIA STATE UNIVERSITY LONG BEACH

City of Long Beach, Los Angeles County, California

PREPARED FOR:

CALIFORNIA STATE UNIVERSITY, LONG BEACH
1331 Palo Verde Avenue
Long Beach, CA 90840
Contact: Melissa Soto, MURP, Campus Planner
Office of Physical Planning & Sustainability

PREPARED BY:

Kate Kaiser, MSHP; Sarah Corder, MFA; Fallin Steffen, MPS; Nicole Frank, MSHP; and Samantha Murray, MA

DUDEK
38 North Marengo Avenue
Pasadena, California 91101

JULY 2019

TABLE OF CONTENTS

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APPENDICES

FIGURES

TABLES

EXECUTIVE SUMMARY

Dudek was retained by the California State University, Long Beach (CSULB) Office of Physical Planning & Sustainability to conduct an historic built environment study for the proposed Parkside North Housing Project (project or proposed project), which will provide student housing on the CSULB campus. The purpose of this study is to determine if the proposed project would impact historical resources as defined by the California Environmental Quality Act (CEQA)(Section 15064.5(a)), or any historical resources eligible for inclusion the Master List of State-owned resources under Public Resources Code (PRC) Sections 5024 and 5024.5.

This report includes the following major components: completion of adequate background and archival research on the project area and the existing Housing and Residential Life (HRL) building proposed for demolition; development of a site-specific historic context for the HRL building; a survey by a qualified architectural historian; evaluation of the HRL building in accordance with National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and City of Long Beach designation criteria and integrity requirements; and consideration of any potential project-related impacts.

While the existing HRL building proposed for demolition is not yet 50 years old, it was designed by local master architect Edward Killingsworth and requires consideration as a potential historical resource under the California Environmental Quality Act (CEQA).

As a result of the evaluation, the HRL building was found not eligible under all applicable designation criteria due to a lack of significant associations and compromised integrity. Therefore, the HRL building is not considered an historical resource under CEQA, nor does it qualify for listing in the Master List of State-owned resources.

As a result of the significance evaluation, the proposed project was determined to have a less than significant impact on historical resources under CEQA.

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1 INTRODUCTION

Dudek was retained by the California State University, Long Beach (CSULB) Office of Physical Planning & Sustainability to conduct an historic built environment study for the proposed Parkside North Housing Project (project). The purpose of this study is to determine if the proposed project would impact historical resources as defined by the California Environmental Quality Act (CEQA)(Section 15064.5(a)), or any historical resources eligible for inclusion in the Master List of State-owned resources under Public Resources Code (PRC) Sections 5024 and 5024.5. This report includes the following major components: completion of adequate background and archival research on the project area and the existing Housing and Residential Life (HRL) building proposed for demolition; development of a site-specific historic context for the HRL building and remainder of the project site; a survey by a qualified architectural historian; evaluation of the HRL building and its surroundings in accordance with National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and City of Long Beach designation criteria and integrity requirements; and consideration of any potential project-related impacts.

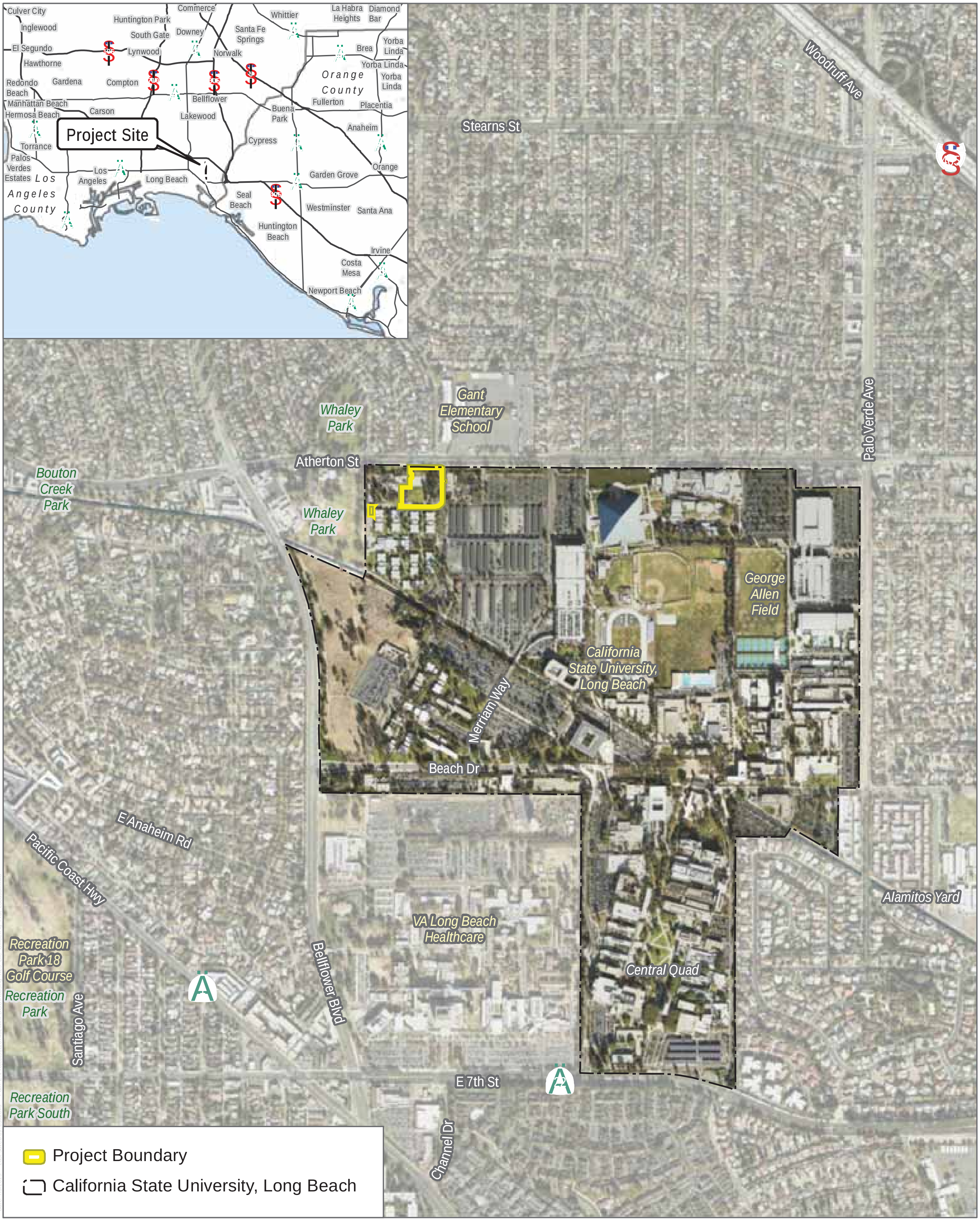
While the existing HRL building proposed for demolition is not yet 50 years old, it was designed by local master architect Edward Killingsworth and requires consideration as a potential historical resource under CEQA.

The historical significance evaluation of the HRL building is directly based on information presented in Chapter 3, Historic Context, of this report, which encompasses a detailed architectural context for the CSULB campus addressing important themes and character-defining features. The purpose of the architectural context is to establish a solid framework for making informed resource eligibility recommendations, environmental impact determinations, and planning decisions on the campus and to streamline future historical resources analysis for other built environment resources on campus.

1.1 Project Location and Setting

The project site is located in the northwestern corner of the CSULB campus in the City of Long Beach, California. The CSULB campus encompasses 322 acres and is located 3 miles from the Pacific Ocean. The campus is bounded by East Atherton Street to the north, Palo Verde Avenue to the east, East 7th Street to the south, and Bellflower Boulevard to the west (Figure 1). Primary vehicular access to the campus is from Earl Warren Drive and Merriam Way from East Atherton Street, State University Drive from Palo Verde Avenue, West Campus Drive from East 7th Street, and Beach Drive from Bellflower Boulevard. Interstate 405 (I-405) runs east-to-west north of the campus, with interchanges at several streets that serve the campus. State Route 22 (SR-22) provides direct access to East 7th Street just southeast of the campus. Interstate 605 (I-605) terminates at I-405 and SR-22 east of campus.

The project site (Figure 2) is bounded by East Atherton Street to the north; Earl Warren Drive and the on-campus Associated Students Inc. (ASI) Recycling Center to the east; a paved unnamed internal campus access road, and on-campus residence halls and outdoor commons in the Parkside College student residences to the south; and an on-campus daycare facility—the Isabel Patterson Child Development Center—to the west. An off-campus residential neighborhood is located north of the project site across East Atherton Street.



SOURCE: Esri, Digital Globe, Open Street Map

DUDEK

0 500 1,000 Feet

FIGURE 1

Regional Map

Housing and Residential Life Office

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SOURCE: Esri, Digital Globe, Open Street Map

DUDEK

0 50 100 Feet

FIGURE 2

Project Location Map

Housing and Residential Life Office

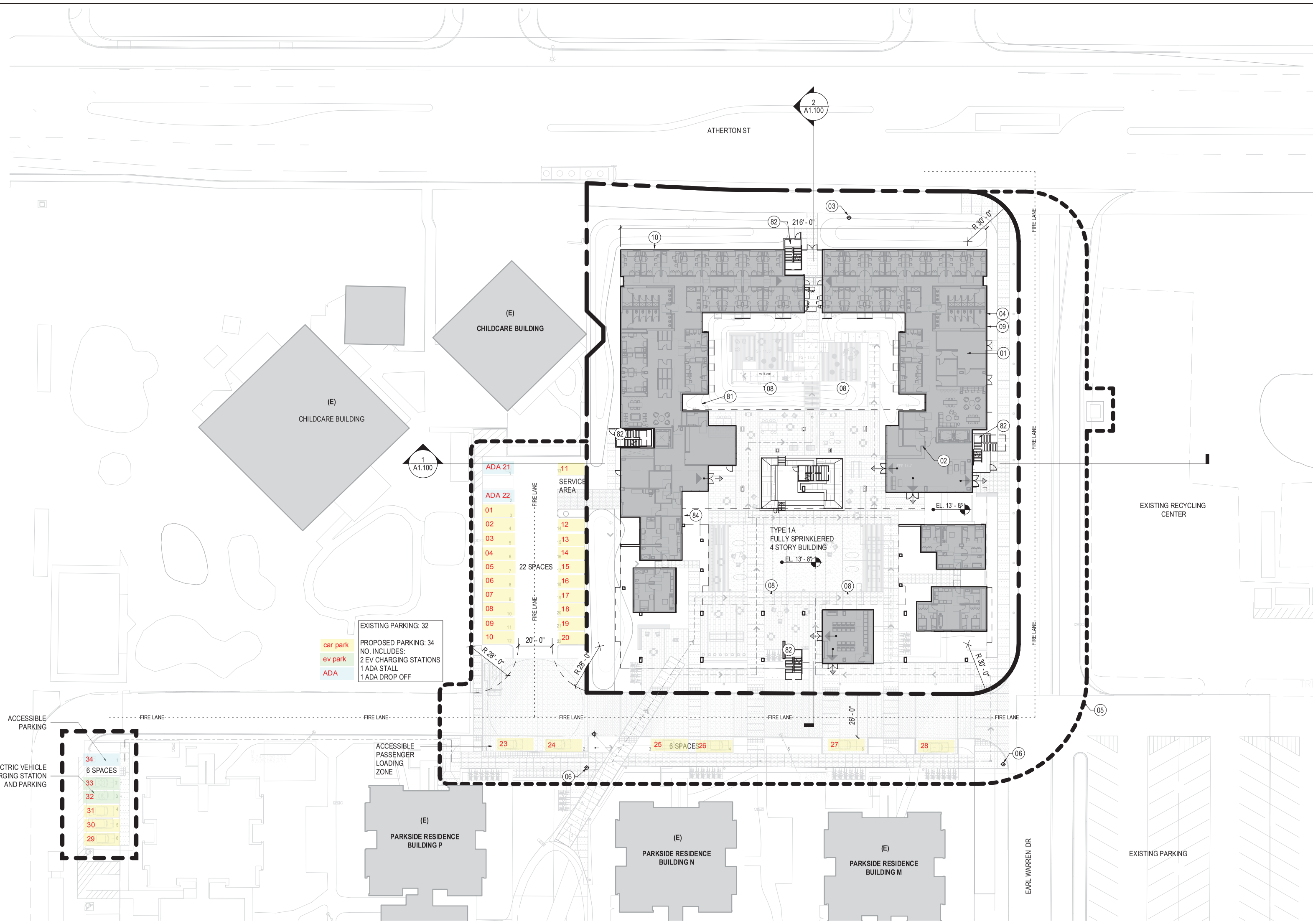
1.2 Project Description

CSULB proposes to construct new student housing in the northwestern part of the campus in accordance with the 2008 Campus Master Plan and Campus Master Plan Update EIR (Figure 3). The proposed three- to four-story building would be sited in a location designated for student housing in the Campus Master Plan and Campus Master Plan Update EIR, and the proposed building characteristics are similar—but not identical—to those originally envisioned in the Master Plan Update EIR.

Construction of the proposed student housing building would involve demolition of the existing, approximately 3,800-gross-square-foot (GSF) HRL building, associated grass lawn, raised garden beds associated with the University Garden, a sand volleyball court, and other existing hardscape and landscape. The proposed new building would be approximately 136,000-GSF and contain 476 beds, representing a decrease from the 522 beds proposed for this location in the Campus Master Plan. Utility infrastructure improvements, new hardscape, landscaping, and lighting would also be provided. Five existing parking spaces in the daycare facility's surface parking lot in the southwest corner of the site would be removed; 22 parking spaces would remain for the daycare facility. An existing loading zone containing six parking spaces (one of which is an accessible space) will be designated for accessible passenger loading. In addition, six new paved parking spaces, including two electric vehicle charging stations, will be created southwest of the project site, in the northwestern corner of Parkside College (also known as the Parkside student residential community), on an existing area of lawn adjacent to existing parking spaces.

The proposed residential unit mix would consist of approximately 412 student beds in 228 double- and single-occupancy bedrooms, 64 student beds in 16 four-bed suites, and four 1- and 2-bedroom apartments for resident faculty and staff. As required by the Campus Master Plan, the building would be three stories or 45 feet in height (50 feet including rooftop equipment screens) on the north elevation facing East Atherton Street, stepping up to four stories or 55 feet in height (60 feet with rooftop equipment screens) on the south elevation facing the Parkside College student residences. The building would be set back approximately 35 feet from East Atherton Street.

The 33 existing trees on the project site and 2 existing trees in the proposed expanded parking area in the northwestern corner of the Parkside College student residences, southwest of the project site, would be removed as part of the project. A new row of shade canopy trees, a planted zone, and a bioswale would be installed along the East Atherton Street campus frontage, adjacent to the project site. Along the Earl Warren Drive frontage, eight existing street trees will be retained. The East Atherton Street frontage of the existing-to-remain daycare facility will include a new standard-width sidewalk, new evergreen street trees, and a new planted buffer. The buffer will include evergreen shrubs to act as screening for ground-level residential units in the proposed building. A privacy fence and planted buffer of shrubs and vines will be incorporated to screen the outdoor courtyard. Along the southern frontage, small- to medium-sized flowering trees with understory planting will be installed along the curb.



3 SITE PLAN _ HOUSING
SCALE: 1" = 30'-0"

SHEET NOTES

01 FIRE ALARM CONTROL PANEL
02 FIRE ALARM ANNUCIATOR PANEL
03 PROPOSED FIRE HYDRANT
04 PROPOSED FDC
05 LIMIT OF WORK
06 EXISTING FIRE HYDRANT
08 STORM DRAIN
09 BACK FLOW PREVENTER (FIRE), REFER TO PLUMBING DRAWINGS
10 BACKFLOW PREVENTER (CW)
81 DRY STANDPIPE
82 FIRE STANDPIPE RISER IN EXIT STAIR
84 ROOF HATCH FOR ROOF CANOPY ACCESS

SITE LEGEND

PROPERTY LINE
FIRE LANE / FIRE ACCESS
PLANTING
POINT OF EXIT
LIMIT OF WORK
ACCESSIBLE ROUTE
ACCESSIBLE (MEANS OF EGRES EXIT DISCHARGE PATH
RED CURB

GENERAL NOTES

SOURCE: Gensler 2019
Dudek 2019

DUDEK

FIGURE 3
Site Plan
Housing Expansion Phase I - Parkside North Housing Project

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The project site encompasses the existing HRL building, built in 1989, and grass lawn to the west of the building. Raised garden beds associated with the University Garden and a sand volleyball court occupy the northern portion of the site; a paved surface parking lot with 27 spaces associated with the daycare facility, and 6 loading spaces on the southern portion of the site. The site topography is relatively level and the site grade slopes gently to the concrete sidewalk around the site without steep slopes or steps. The sidewalk around the site is connected to adjacent Parking Lots G7, G8, and G9 and the Parkside College student residences via crosswalk and/or curb ramps.

1.3 Personnel

Dudek Architectural Historians Kate Kaiser, MSHP, Nicole Frank, MSHP, and Fallin Steffen, MPS, Senior Dudek Architectural Historian Sarah Corder, MFA, and Dudek Principal Architectural Historian Samantha Murray, MA prepared this report and the associated property significance evaluations. Each of these Architectural Historians meets or exceeds the Secretary of the Interior's Professional Qualification Standards for architectural history. Key staff resumes are provided in Appendix A.

1.4 Regulatory Setting

National Register of Historic Places

Although there is no federal nexus for this project, the HRL building was evaluated in consideration of the NRHP designation criteria and integrity requirements to comply with PRC Sections 5024 and 5024.5. The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act, as amended. Its listings encompass all National Historic Landmarks, as well as historic areas administered by the National Park Service.

NRHP guidelines for evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity and to meet at least one of the following criteria listed below.

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and, per criteria A-D below,

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

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

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

D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, *How to Apply the National Register Criteria for Evaluation*, as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (NPS 1990). NRHP guidance further states that properties must have been completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing.

State

Public Resources Code Sections 5024 and 5024.5

PRC Sections 5024 and 5024.5 provide the following guidance:

5024 (a–h): Describes the process of inventorying and evaluating state-owned historical resources in consultation with the State Historic Preservation Officer (SHPO).

5024.5 (a–g): Describes the process of identifying adverse effects and development of alternatives and mitigation for state-owned historical resources in consultation with, and as determined by, the SHPO.

Review of Projects Affecting State-Owned Historical Resources

Under PRC Sections 5024(f) and 5024.5, state agencies must provide notification and submit documentation to the SHPO early in the planning process for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List (buildings, structures, landscapes, archaeological sites, and other nonstructural resources). Under PRC Section 5024(f), state agencies request the SHPO's comments on the project.

Under PRC Section 5024.5, it is the SHPO's responsibility to comment on the project and to determine if it may cause an adverse effect (PRC Section 5024.5), defined as a substantial adverse change in the significance of a historical resource (PRC Section 5020.1(q)). In this case, historical resources are defined as resources eligible for or listed in the NRHP and/or resources registered for or eligible for registering as a California Historical Landmark (CHL).

California Historical Landmarks

CHLs are buildings, structures, sites, or places determined to have statewide historical significance for meeting at least one of the criteria listed below (OHP 2019).

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

For a resource to be designated, it must have written consent of the property owner, be recommended by the State Historical Resources Commission, and be officially designated by the Director of California State Parks. CHLs #770 and above are automatically listed in the California Register of Historical Resources (CRHR) (OHP 2019).

California Register of Historical Resources

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources on the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.

(2) Is associated with the lives of persons important in our past.

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource fewer than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see California Code of Regulations, Title 14, Section 4852(d)(2)).

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

California Environmental Quality Act

As described further below, the following CEQA statutes and guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."
- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of an historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b)–(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation in place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context, and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is either listed or eligible for listing in the CRHR, or if it is included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource" reflecting a significant effect under CEQA means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project (CEQA Guidelines Section 15064.5(b)(2))

(1) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or

(2) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to Section 5020.1(k) of the PRC or its identification in an historical resources survey meeting the requirements of Section 5024.1(g) of the PRC, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(3) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any historical resources, then evaluates whether that project would cause a substantial adverse change in the significance of a historical resource such that the resource's historical significance is materially impaired.

If it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2(a), (b), and (c)).

Section 21083.2(g) defines a unique archaeological resource as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as tribal cultural resource (PRC Sections 21074(c) and 21083.2(h)), further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in PRC Section 5097.98.

City of Long Beach 2.63.050 Criteria for designation of Landmarks and Landmark Districts

As a state agency, the CSU is exempt from and not governed by local ordinances unless the legislature has specifically stated so. However, the following local landmark or landmark district designation criteria for the City of Long Beach (amended in January 2015 (ORD-15-0038 § 1, 2015), is included for consideration purposes only:

> Landmarks. A cultural resource qualifies for designation as a Landmark if it retains integrity and manifests one (1) or more of the following criteria:
>
> A. It is associated with events that have made a significant contribution to the broad patterns of the City's history; or
>
> B. It is associated with the lives of persons significant in the City's past; or
>
> C. It embodies the distinctive characteristics of a type, period or method of construction, or it represents the work of a master or it possesses high artistic values; or
>
> D. It has yielded, or may be likely to yield, information important in prehistory or history.
>
> Landmark Districts. A group of cultural resources qualify for designation as a Landmark District if it retains integrity as a whole and meets the following criteria:
>
> A. The grouping represents a significant and distinguishable entity that is significant within a historic context.
>
> B. A minimum of sixty percent (60%) of the properties within the boundaries of the proposed landmark district qualify as a contributing property.

2 BACKGROUND RESEARCH

2.1 CHRIS Records Search

The following paragraphs detail all background research conducted on the project site in an effort to establish a thorough and accurate historic context for the property significance evaluations and to confirm the building development history of the project area and its associated buildings and structures.

Dudek conducted a CHRIS records search on March 6, 2019, of the entire CSULB campus and a half- (0.5-) mile records search buffer surrounding the campus at the SCCIC. This search included their collections of mapped prehistoric, historic, and built environment resources, State of California Department of Parks and Recreation site records, technical reports, and ethnographic references. Additional consulted sources included historical maps of the proposed project site, the NRHP, the CRHR, the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility. The complete results of the records search are presented in Confidential Appendix B. A summary of the results is provided in the paragraphs that follow.

Previously Completed Technical Studies

Results of the cultural resources records search indicated that 39 previous cultural resource studies have been conducted within a 0.5-mile (800 meters) of the proposed project site between 1972 and 2011. Of these 39 studies, 20 overlap all or a portion of the proposed project site.

Of the 20 studies that overlap the proposed project site, one is an inventory of archaeological resources at the CSULB Campus (LA-0491 and LA-04091). Seven were prepared in support of various developments or improvements at CSULB (LA-00263, LA-04270, -04274, -04275, -04276, -04277, and -08495). Six are comments, reviews, and correspondence associated with the archaeological resources and assessments on the CSULB campus (LA-02792, LA-02793, LA-02795, LA-02864, LA-02870, and LA-04268). Three of the overlapping reports are cultural resource management plans and research designs for the preservation of archaeological resources at the CSULB campus (LA-04355, LA-08497 and LA-08498). One is an article discussing the relationship between CSULB and Native American groups (LA-06829). The final overlapping report presents a review of the Native American village of Puvunga, which was located within the general boundaries of the CSULB campus (LA-06160). The nine overlapping studies were all prepared between 1993 and 2003.

Previously Recorded Cultural Resources

A total of 27 previously recorded cultural resources have been documented within 0.5-miles of the proposed project site. Of the 27 previously recorded resources, two overlap the proposed project site (CA-LAN-000234 and CA-LAN-000235). The remaining 25 resources within the 0.5-mile record search area include one historic site, two multi-component sites, and 22 prehistoric sites.

2.2 On-Campus and Archival Research

CSULB Office of Physical Planning and Sustainability

Dudek obtained access to the University's building development files on May 14, 2019. These files were used to gather information such as construction dates, alterations, and to confirm the building's architects from the digitized building plan sets.

CSULB Special Collections and University Archives

Dudek visited CSULB's Special Collections and University Archives on May 14, 2019, June 4, 2019 and June 6, 2019. The University Archivist and Special Collections Librarians Chloe Pascual and Heather Steele were consulted for specific information pertaining to the development of the campus. Dudek staff reviewed historical campus maps, presidential papers collections, historical photographs of campus buildings and landscapes, and planning documents related to campus development.

University of California Santa Barbara (UCSB) Special Collections

Dudek visited the University of California Santa Barbara Architecture and Design Collection on April 16, 2019. The Reference Archivist, Julia Larson, was consulted for information specific to architect Edward Killingsworth. Dudek staff reviewed variety of materials from the Killingsworth Collection including, newspaper clippings, letters, and a variety of other archival materials.

Long Beach Heritage

Dudek contacted Long Beach Heritage on May 23, 2019 as part of the archival research effort for the architectural historic context for the CSULB campus. Executive Director Sarah Locke provided information pertaining to the work of Ed Lovell throughout Long Beach and provided assistance in scheduling an interview with original campus architect Donald Gibbs. Dudek also attended a campus tour hosted by Long Beach Heritage on the CSULB campus on June 4, 2019. During the tour, information was provided pertaining to the history of the overall history of the campus, as well as, information pertaining to the public art throughout campus. All information obtained from Long Beach Heritage was used in the preparation of the historical context.

2.3 Building Development Research

Construction History

The HRL building was designed by Killingsworth, Stricker, Lindgren, Wilson & Associates, Inc. (KSLW) in 1987 (KSLW 1987). Construction began in 1988 and was completed by 1989. The following alterations and updates were identified through research conducted of the University's building development files on May 14, 2019.

- Addition (north side), c. 1991
- Volleyball Courts added, c. 1995

Historic Aerial Photographs

Historic aerial photographs of the project area were available from the Nationwide Environmental Title Research (NETR) Maps for years 1952, 1953, 1963, 1972, 1994, 2002, 2003, 2004, 2005, 2009, 2010, 2012, and 2014; and from University of California, Santa Barbara FrameFinder Aerial Collection for years from 1941, 1947, 1952, 1956, 1960, 1970, 1975, 1976, 1980, 1981, 1983, 1986, and 1990. Photographs of the campus prior to 1950 show a series of hilly orchards and agricultural fields. Between the 1941 and 1947 aerial photographs, the Veteran's Administration (VA) Hospital campus appears southwest of the future CSULB campus site (NETR 2019; UCSB 2019).

The first aerial photograph showing the CSULB campus after it was purchased by CSU was from 1952 and buildings populate both upper and lower campus portions between 1952 and 1990. The Isabel Patterson Child Development Center was the first building added to the northwest corner of campus along East Atherton Street, west of Earl Warren Drive. The Child Development Center appears between the 1972 and 1975 aerial photographs. Next, the Recycling Center appears in the 1980 aerial photograph for the first time. Between the 1983 and 1986 photographs, the 16 new residence halls, the Parkside College student residences, appear in the northwest corner of the campus.

The HRL building first appears in the 1990 aerial photograph. Volleyball courts appear beside the housing office between the 1994 and 2002 photographs. There are no notable changes to this northwest corner of the campus after 2002.

Sanborn Fire Insurance Company Map Review

The Sanborn maps for the City of Long Beach were available for the years 1888, 1891, 1895, 1898, 1902, 1905, 1908, 1914, 1928, 1949, and 1950. The campus area and general region is not covered in any of the maps, as the campus location then was outside of the major urban area. The later maps extended no further east than Havana Street, which was just east of the Municipal Golf Links on the west side of Highway 1 from the VA Hospital.

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3 HISTORICAL CONTEXT

The following presents the historical context for CSULB Campus as well as research specifically concerning development of the existing HRL building.

Early Campus Development and Land Acquisition (1949-1953)

On January 29, 1949, a new state college intended to serve Los Angeles and Orange Counties was established by California State Assembly Bill No. 8. After the bill's passage, the State Board of Education appointed Dr. P. Victor Peterson as the first president and named the new college the Los Angeles–Orange County State College. No location was determined for the campus by the bill and the cities of Santa Ana, Downey, and Long Beach competed for campus selection. In March 1949, Long Beach was chosen over the City of Downey as the third post-World War II (WWII) location for a four-year California state college. Though the City of Long Beach had not yet selected a specific location, a 319-acre site adjacent to the Long Beach Naval Hospital, called the "Bixby Site", was in contention for the campus location (Figure 4). The parcel, owned by Fred H. Bixby, was a hilly, sloping site near the Alamitos Heights neighborhood and exceeded the 200-acre campus size requirement (Bernstein and Briegel 1989; LBI 1949a, 1949b; LBSC 1960).

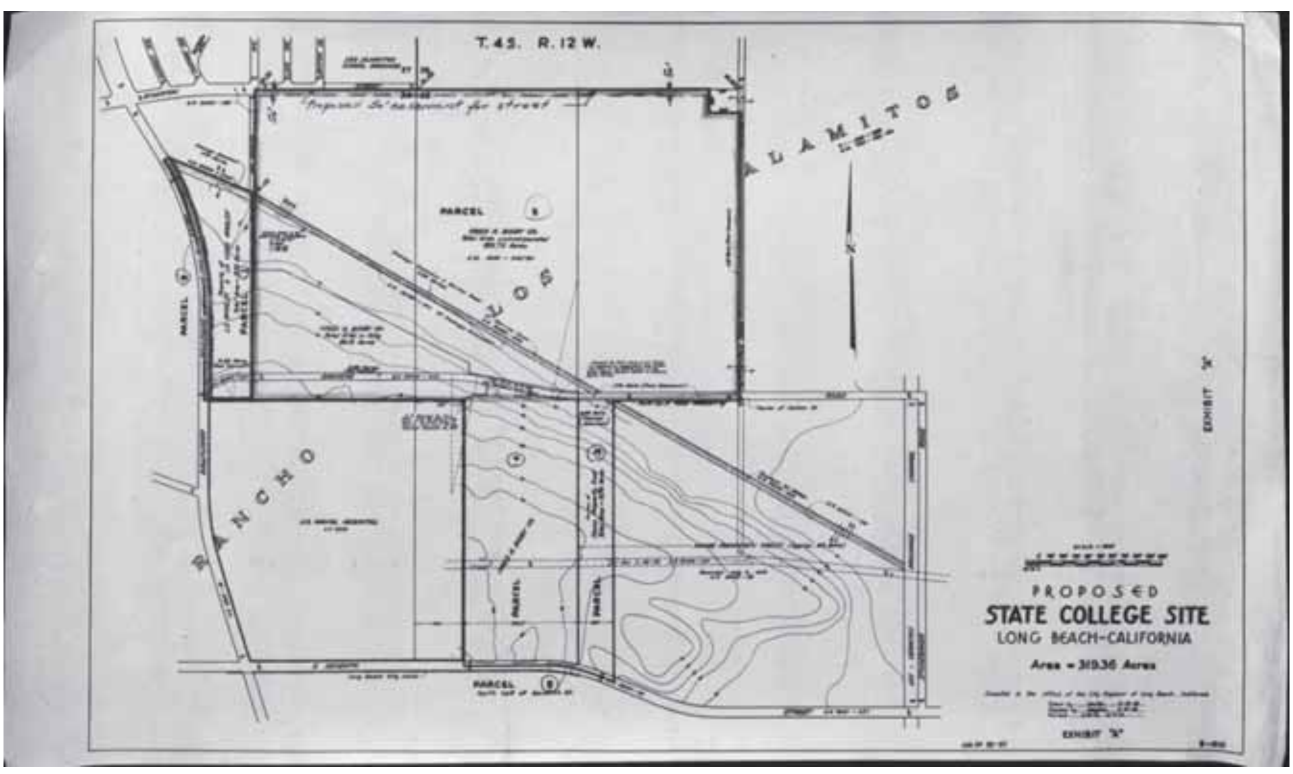

Figure 4. Proposed State College Site (Bixby site), 319.36 acres, 1950 (CSULB Special Collections)

While the future campus location was being debated, state college officials leased a garden apartment building at 5401 East Anaheim Street to serve as an interim campus to hold classes. The Los Angeles–Orange County State College opened in fall 1949 with 160 students enrolled. In June 1950, City of Long Beach voters approved the purchase of the 319-acre Bixby Site for $1,000,000, without bond issue or special tax, by paying with Tideland Revenues from the oil industry. In October 1950, the State Director of Public Works selected Hugh Gibbs, a local Long Beach architect who had worked on Long Beach City Hall and Library, to prepare site plans and design the buildings for the new campus. For the 1950-1951 school year term, the college was renamed Long Beach State College, which it remained until 1964. While classes continued at the 5401 Anaheim apartment, temporary facilities were built in what is now the lower campus. By 1951, classes were being held for the 1,000 students out of 23 wooden buildings on the new campus land, with more temporary facilities constructed in 1952 (Figure 5) (Bernstein and Briegel 1989; Gilb 1973; LAT 1950; LBI 1949c; LBSC 1960).

Figure 5. Gymnasium (lower center) with temporary campus buildings (upper center), circa 1951-1952 (CSULB Special Collections)

The Gibbs Master Plan (1953-1962)

As early as 1950, Hugh Gibbs and Long Beach State College president P. Victor Peterson appealed to the state finance department to include funds for operation of the Long Beach State College temporary buildings and funding for the campus master plan and building program. Gibbs was officially selected by the State Director of Public Works in October 1950 to plan the permanent campus buildings for the new state college. Gibbs immediately began making the preliminary plans for the first buildings and models for the master plan which would "economically utilize to the best advantage the natural features of the site (IPT 1955:4)" and orient classroom buildings with a northerly aspect so as to avoid undesirable light conditions and heat. Cognizant especially of sunny conditions, Gibbs's plan called for buildings to be connected by covered walks. Gibbs wrote that "It was determined that the overall feeling of the design should stress simplicity without bleakness, dignity without sternness, be straightforward, emanating a feeling of warmth and friendliness through the use of color and texture in the materials of construction (Figure 6) (LAT 1953: V8)" (IPT 1955; LAT 1950, 1953; LBI 1950).

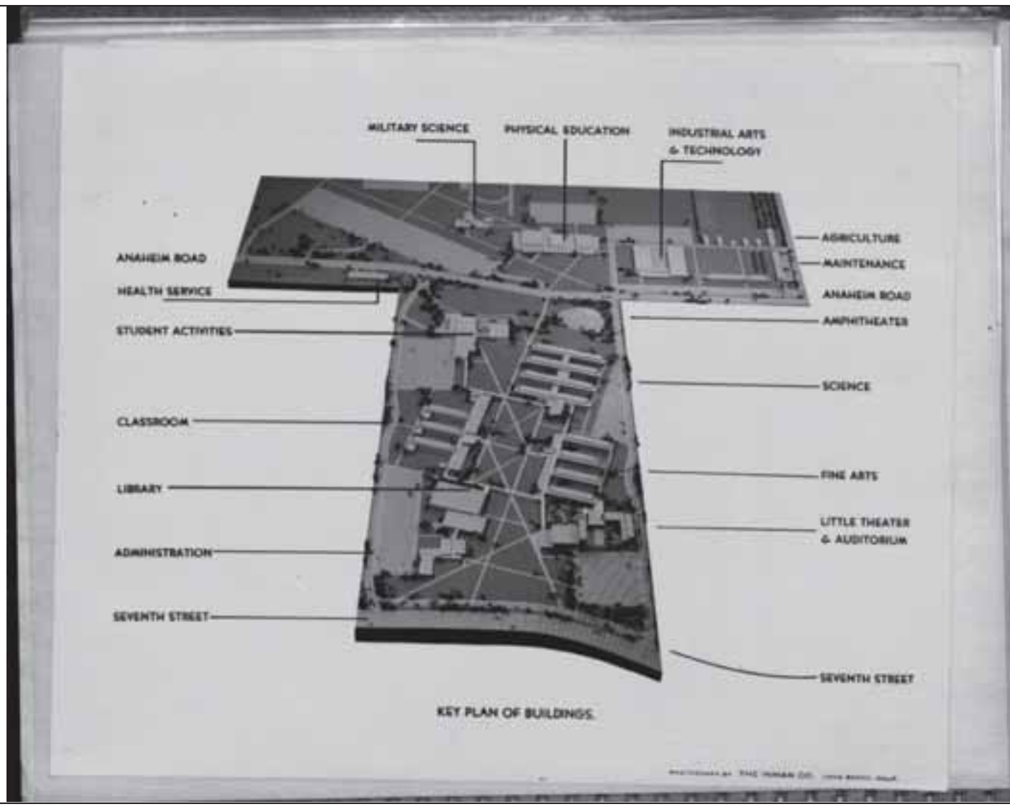

Figure 6. Hugh Gibbs's Master Plan model, looking north, 1953 (CSULB Special Collections)

In 1953, Hugh Gibbs's master plan for the campus was approved and groundbreaking for the first five permanent buildings at the Long Beach State College began. Gibbs's master plan was originally intended to accommodate 5,000 full-time students and was estimated in 1953 to cost $20 million to complete. The first of five units were designed by Gibbs, with subsequent planned buildings designed by various architects at the State Division of Architecture (IPT 1955; LAT 1953).

The first permanent buildings on campus were erected and dedicated by 1955. These were the original Physical Education Building ($400,000) and athletic field ($100,000) on the lower campus, comprising a gymnasium, locker rooms, lecture rooms, tennis courts, handball courts, baseball and football fields and a track. Next, at the upper campus, a general classroom building with two wings was constructed ($465,500), accommodating 35 classrooms and two large lecture halls. A "Fine and Applied Arts" building with two wings and classrooms also boasted a ceramics kilning classroom, glaze rooms, equipment storage, and offices ($488,000). A 500-seat "little theater" and a library ($330,000) rounded out the first group of buildings. Gibbs's master plan also called for a tilted axis quad lawn for the upper campus, as well as tree plantings, shaded walks, crossing paths, bridges, and garden spaces. However, original drawings indicate that several State Division of Architecture architects drew up the planting plans, original paths, and ground improvements (Division of Architecture 1954; Gibbs 1953a, 1953b, 1953c, 1953d, 1953e, 1953f, 1953g; LAT 1953; LBSC 1953).

After the first five permanent buildings were completed, dedicated, and occupied in January 1955, the student Lounge, Bookstore, and Administrative Office buildings were completed shortly thereafter (Figure 7). Construction, however, would be a constant on the campus from this point forward. Gibbs's original master plan called for a capacity of 5,000 full-time enrolled students; however, enrollment quickly out-paced Gibbs's plan. For the 1955-1956 school year, 2,300 full-time enrolled students were projected, but the actual number of enrolled students was over 5,400—already exceeding the 5,000-student capacity planned by Gibbs. The 1956-1957 school year had over 6,900 students enrolled. Boosted enrollment was good publicity for the growing college, but the original Gibbs's master plan had set aside parking for only 1,000 vehicles. Even the commemorative newspaper released for the 1955 state college dedication called for more buildings and more parking lots to be constructed to keep up with enrollment (Bernstein and Briegel 1989; Gibbs 1953a; IPT 1955; LBSC 1957).

Figure 7. Upper Campus, looking north to lower campus, administration building under construction on foreground, 1955 (CSULB Special Collections)

A few more buildings were added to the campus in 1956: the Cafeteria addition and the first unit of the Science Buildings (Peterson Hall 2, now the Student Success Center). Most of these buildings were designed by the State Division of Architecture or local, private architects. The Soroptimist House, begun in 1955 for the Associated Students of Long Beach as a precursor to the Student Union, was designed by private architectural firm Francis Osmond Merchant and J. Richard Shelley and completed in 1957.

In 1957, a four-year $13 million dollar building plan commenced, to complete in-progress buildings and add more buildings to the campus: a new science building addition, a new fine arts building, a music building, a swimming pool, library addition, on-campus dormitories, and men's gymnasium. The Administration Building and Annex were completed in 1957, as well as the Cafeteria, Bookstore, and Student Office Complex. The cafeteria complex had been planned as a single building in Gibbs' master plan, but was instead constructed in phases creating its own small complex on the north side of the upper campus by Gibbs and the State Division of Architecture. In 1958, the Music Building opened as well and a new Fine Arts Building was added to the rest of the complex. The Engineering and Industrial Arts complex east of the gymnasium and fields in lower campus began construction in 1958 and the new Engineering program dean held classes in the still-standing temporary campus buildings from 1950. In 1959, the first on-campus housing was added with construction of two State Division of Architecture-designed dormitories at what is now the Hillside College: the Los Cerritos men's dormitory and the Los Alamitos women's dormitory (Bernstein and Briegel 1989; Gibbs 1956; IPT 1956, 1957; LBI 1957, 1958; LBSC 1960).

In June 1959, P. Victor Peterson stepped down as Long Beach State College president and a new college president, Carl McIntosh, was appointed. Under McIntosh, campus development and construction continued at a rapid pace to keep up with growing student enrollment. In 1960 enrollment reached over 10,000 students and $5 million in building projects were underway: the third and largest building in the science group; the first permanent building in the engineering complex; the fourth major building in the fine arts complex; and an administration annex. With the campus over capacity for enrolled students, and in an effort to bring the state college into compliance with the Master Plan Study of Higher Education in California (1956), McIntosh announced plans to reorganize campus operations. The Master Plan Study outlined the roles of junior colleges, state colleges, and the Universities of California in the state, and defined curriculum and standards for higher education. As such, McIntosh's proposed reorganization would entail changes to administrative responsibilities, department arrangements, curriculum structure, as well as considering a new campus master plan (IPT 1959a; LBI 1960a, 1960b; LBSC 1960).

By 1960, capacity issues with the 1953 campus master plan had come to a head. A total of $31 million in improvements had been made to the campus since 1953, mostly concentrated in the upper campus, but the classroom capacities continued to lag significantly behind the amount of students enrolled. In the fall term of 1960, over 10,000 students were enrolled on a campus meant for only 5,000. The administration of Long Beach State College was unhappy with the State Division of Architecture buildings, the prevailing design "decreed that buildings must not only be cheap to build but must look cheap as well. There was a real fear that the public of the State of California would be very upset if any building on a college campus was in the least attractive. (Tyndall 1970: 1-2)." Students were also unhappy with classroom space and referred to the campus design as "San Quenton(sic) modern" with no trees, referring to the San Quentin State Prison buildings, also designed by the State Division of Architecture (Lee 1969; Killingsworth 1994; Tyndall 1970.)

In 1961, the Board of Trustees for the State College System became dissatisfied with the direction and poor quality of State Division of Architecture campus design at all state college campuses and discontinued the use of the State Division of Architecture for future projects and decided to appoint private practice architects as campus architects. In 1962, Edward Killingsworth of Killingsworth-Brady-Smith & Associates, Architects was selected for Long Beach State College. Killingsworth's first task was to provide the campus with a new campus master plan, which increased housing, classrooms, administrative offices, and faculty office space, and parking (IPT 1961a, 1961b, 1961c; LBI 1961a, 1961b; 1962a, 1962b; Killingsworth 1994; Tyndall 1970).

3.1 The Killingsworth, Brady & Associates Master Plan (1962-1975)

In 1962, Long Beach State College appointed Killingsworth-Brady-Smith & Associates as the new Campus Master Plan architecture firm, led by prominent Long Beach architect Edward Killingsworth. That same year, Waugh Smith left the firm and Killingsworth-Brady-Smith & Associates, Architects was renamed Killingsworth Brady & Associates (KBA). In 1964, Ed Lovell, American Society of Landscape Architects (ASLA), was chosen by the college to partner with KBA as the campus landscape architect. The Campus Master Plan was published in January 1963, citing $60 million in improvements to the campus. More forward thinking than the preceding plan, KBA's plan assumed a capacity of 20,000 full-time students, while a little over 9,000 students were enrolled the year it was published. Highlights of the new plan included a concrete plaza topped by a 9-story faculty office building, called the "theme building" of the campus, a formal campus entry and loop drive off of 7th Street, and a three-level University Student Union built into a hillside. The improvements also included more on-campus student housing and parking. The plan also explicitly called for sculpture, fountains, and artwork throughout the campus as well as a promenade from the Library to the Physical Education building on the lower campus, forming a tree-lined artery through the center of campus. Finally, the plan proposed to close State College Drive (formerly Anaheim Road) to traffic where it had previously bisected and separated the upper and lower campuses (IPT 1963a; Harmon 1964; Killingsworth-Brady-Smith Associates, Architects 1963; LBI 1962a; Martin 1962).

The final charge of the master planning document was to integrate Hugh Gibbs's existing master planned buildings and the contributions of the State Division of Architecture (Figure 8) with Killingsworth's vision for necessary changes, renovations, and emerging needs of the projected master planned campus (Figure 9). "The completed college with its full 20,000 F.T.E. will have the appearance of a total building program rather than one of parts" (Killingsworth-Brady-Smith Associates, Architects 1963: 7). Killingsworth proposed to do this by redeveloping existing areas of campus, such as the 1953-planned Student Union that blocked a vista of the City of Long Beach, and redeveloping the original stairs from lower to upper campus into a fully landscaped promenade with sculptures, fountains, terraces, and plantings to create outdoor spaces for students (Gibbs 2019; Killingsworth-Brady-Smith Associates, Architects 1963).

Buildings constructed during this period fall into two types: 1) holdover projects that were approved as part of a previous funding cycle when buildings were still being designed by the State Division of Architecture and received oversight from Killingsworth, and 2) private practice architect projects which received oversight from Killingsworth. In addition to authoring the Campus Master Plan, as the campus consulting architect, Killingsworth and his firm, KBA, were heavily involved in the building design approval process on campus. Newly designed buildings now had to be approved by Killingsworth, after the architect was selected and before the budget approval stage (CSULB 2019; Gibbs 2019; Horn 1970a).

The first completed component of the KBA Campus Master Plan was the Health and Human Services Center, planned additions to the Physical Education Building by Kenneth Wing from Killingsworth's previous firm.

These additions were funded by state bonds in 1962 after years of acknowledging the need for such student services. The Health and Human Services Center was followed by completion of the Health Center, Bookstore Addition, and Industrial Arts Building 2 (now Human Services and Design) completed later in 1965 and 1966 (Brasher 1989; Gibbs 2019; IPT 1962, 1963b; Perry 1981).

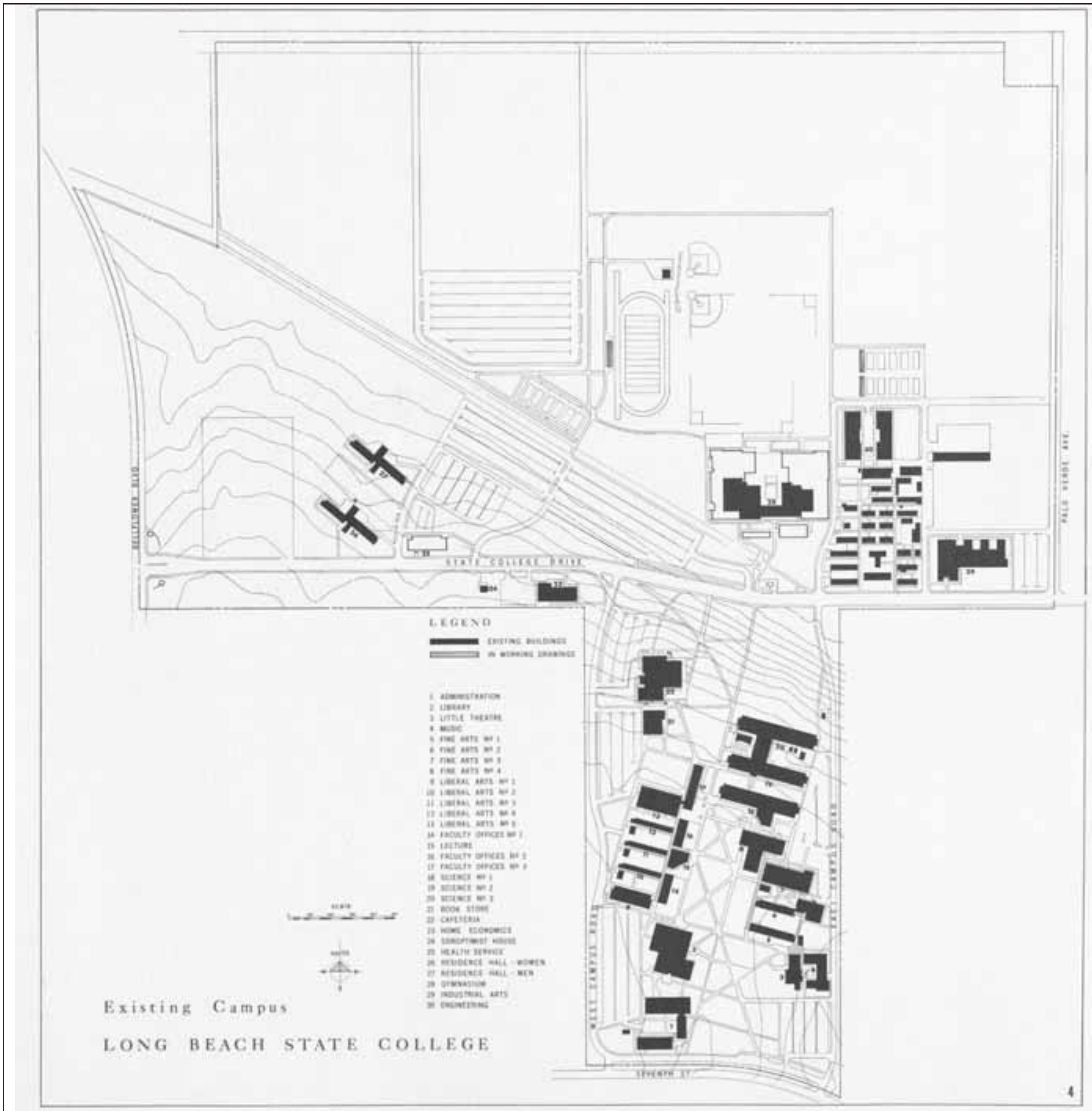

Figure 8. Existing Campus, Long Beach State College, 1962 (Killingsworth-Brady-Smith Associates, Architects 1963)

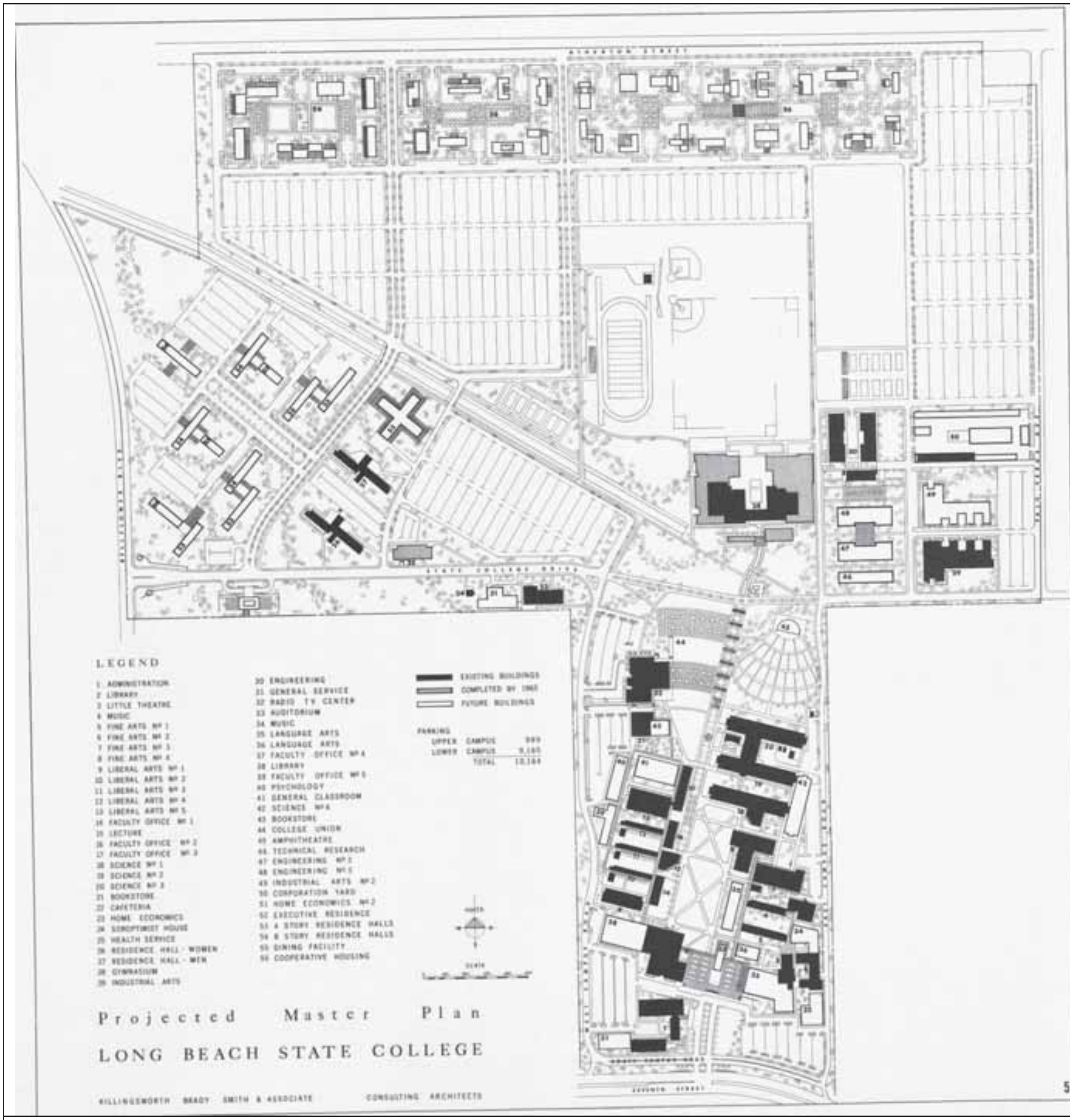

Figure 9. Projected Master Plan, Long Beach State College, 1962 (Killingsworth-Brady-Smith Associates, Architects 1963)

Landscape design was also an important component of Killingsworth's vision for the CSULB campus. In 1964, a letter from the Dean of Development indicated that Killingsworth, Ed Lovell, Bob Wells, and Robert Irwin met to develop a planting plan program for flowering trees. Lovell proposed planting Helen Borcher flowering peach trees on campus, using crowd-sourced funding through a newspaper drive, affectionately naming donors the "Peach Corps" (Figure 10). The popular fund drive introduced the iconic flowering peach tree to the campus by 1966 (Bernstein and Briegel 1989; IPT 1964; Irwin 1964; LBI 1964a; Lovell 1988).

Figure 10. Ed Killingsworth and CSULB staff planting a peach tree (CSULB Special Collections)

The next component of the new Campus Master Plan to be approved was the 9-story Language Arts Center office building, a 3-story language arts classroom and laboratory building, and the 7th Street entrance and loop drive, with a projected cost of $1,848,500. Killingsworth intended for the 9-story office to be the campus's "theme building," located in the heart of the upper campus and serving as a prominent focal point of the next portion of the Campus Master Plan – the 7th Street entrance and loop drive. The one-way loop drive formalized 7th street as the main entrance to the campus with two curved concrete entry walls and plantings. These projects were completed in 1967 (Killingsworth-Brady-Smith Associates, Architects 1963; LBI 1963).

In 1964, the college was renamed California State College at Long Beach, then simply California State College, Long Beach in 1968. In 1972, the campus was finally named California State University, Long Beach. Throughout these years, KBA continued to be confirmed as the consulting architects for the college on an annual basis by the State College Board of Trustees. (Harmon 1966, 1969, 1970; Horn 1971; Volland & Mullio 2013).

After full-time enrollment exceeded the 20,000 students planned for by KBA in their 1963 Campus Master Plan, KBA began the work of preparing an updated Campus Master Plan. Master Plan revisions approved by the College's Board of Trustees came out every few years. The 2008 CSULB Campus Master Plan references updates from September 1965, June 1966, November 1970, January 1972, May 1972, March 1974, July 1976, September 1976, November 1978, March 1982, January 1984, November 1984, July 1986, September 1988, November 1990, September 1991, September 1994, November 1994, July 2003, and May 2008. The most recent Campus Master Plan revisions were not authored by Killingsworth's firm. Though revised Campus Master Plans from the 1970s increased the building stock in response to increases to the full-time student enrollment cap, university enrollment stabilized around 22,000 students by 1980. The revised Campus Master Plans were intended as updates to the existing plan, not to introduce a new unifying design philosophy for the campus (Bernstein and Briegel 1989; CSULB 2008a; Kingsley-Wilson 2015).

Establishment of the Campus Architectural Vocabulary (1966)

The unified aesthetic of the CSULB campus did not originate with Killingsworth, although he appears to have made it official. Rather, it was Gibbs who established the dominant material types used throughout campus in the 1950s with his use of brick, painted concrete, low-story buildings, and use of natural topography. However, it was Killingsworth who realized the need for an established architectural vocabulary in order to create a cohesive design aesthetic that would continue for decades to come.

In 1966, Killingsworth exchanged a series of letters with then-college president Carl McIntosh over an Architectural Vocabulary memorandum. This document, intended for Harry Harmon, the assistant vice chancellor of the Physical Planning and Development Department for the College, outlined the design guidelines and established design standards for the California State College at Long Beach buildings. The memo also indicated that several design elements of the older (Gibbs-designed or State Board of Architecture-designed) buildings would be phased out in subsequent maintenance projects, to better match the unifying materials and color palette outlined by Killingsworth (1966).

Killingsworth's memo required Norman face brick, concrete (painted), and textured plaster (painted) as exterior wall materials, as well as explicitly stating that older bright colored metal curtain walls would be "painted out and replaced with the neutral colors of the C.S.C.L.B. color palette." Roofs would be flat, with or without parapets. Only the Home Economics Building (now Family and Consumer Sciences) and the Soroptimist House could retain their pitched roofs. Sunscreens were to be anodized aluminum or aluminum with baked enamel finish in bronze tones. Screen forms could only be rectilinear. Older sunscreens in brighter metal or colored tones would be painted over. Screen walls at grade were to be freestanding brick walls, and rooftop screening was to be simple steel decking. Walkways and steps were to be colored concrete and common brick. Retaining walls were explicitly detailed as Dutch White-colored brick manufactured by the Los Angeles Brick Company. Covered walkways had to have flat roofs of concrete or steel, supported by square tubular steel columns. Any connecting building canopies were to be concrete. Finally, Killingsworth defined a campus color palette using the Plochere Color System (Killingsworth 1966). Table 1 provides a photographic guide to the campus architectural vocabulary (as outlined by Killingsworth in 1966), using present-day photographs taken throughout the campus.

Table 1. The CSULB Campus Architectural Vocabulary (Killingsworth 1966)	
Exterior Walls of Buildings	
Norman Face Brick	
Concrete (painted)	

Table 1. The CSULB Campus Architectural Vocabulary (Killingsworth 1966)	
Textured Plaster (painted)	
Mosaic Aggregate Panels (used only at accent areas, and in one pattern only)	
Note: On Campus there are several older buildings with bright colored metal curtain wall systems. This form will not be repeated on the new buildings. As maintenance is required, the bright colors are being painted out and replaced with neutral colors of the C.S.C.L.B. color palette.	

Table 1. The CSULB Campus Architectural Vocabulary (Killingsworth 1966)	
Roofs	
Flat, with or without parapets. No pitched roofs are to be used	
Note: The Home Economics Building and the Soroptomist House both have pitched, gravel roofs. Any addition to either of these buildings should be in the same character. These two buildings as the only exception on the Campus to the Flat Roof Standard.	
Sunscreens	
At Windows: There shall be of anodized aluminum or aluminum with baked enamel finish in the bronze tones. The form of the screen shall be of a simple rectilinear pattern similar to the new Bookstore or the Theme Building.	

Table 1. The CSULB Campus Architectural Vocabulary (Killingsworth 1966)	
Overhead: Overhead screens will be made up of 2" x 3"V.G. Douglas Fir spaces 1-5/8" apart and set within a structural frame work.	
Note: There are numerous sun screens on existing buildings in many patterns and colors. As maintenance is needed the bright colors will be painted out and replaced with the neutral colors of the C.S.C.L.B. color palette.	
Screen Walls (Utility areas, etc.)	
On roofs: Simple steel decking set vertically (similar to the Bookstore)	

Table 1. The CSULB Campus Architectural Vocabulary (Killingsworth 1966)	
At Grade: Brick free standing walls	
Walks and Steps	
Colored concrete walkway with red brick used in accent areas	
Retaining Walls (Accent type wall)	
Brick in the Dutch White color as manufactured by the Los Angeles Brick Company.	

Table 1. The CSULB Campus Architectural Vocabulary (Killingsworth 1966)	
Covered Walk Ways	
Roofs are to be flat of concrete or steel and supported by square tubular steel columns	
Where canopies become an integral part of a building, they then should be of concrete	

3.2 Lower Campus and Post-Modern Development (1975-2001)

In 1970, Stephen Horn and Frances Flynn, Executive Dean of Development, discussed recently approved plans for a new administration annex building to be erected at the south end of upper campus in a parking area, and a new Liberal Arts Classroom and Faculty office to be located inside the central quad. Horn expressed to Flynn that the proposed locations of these buildings were "unbelievable," and was shocked that the locations were approved by the Academic Senate since it would destroy part of the central quadrangle. Horn chose this moment to permanently shift development of the campus from "up the hill" to the relatively neglected lower campus, and shared his vision with KBA that the upper campus had become cluttered. The result was the subsequent concentration of the majority of new buildings, additions, and renovations after 1975 on the lower campus. The first of these was the 1975 Administration Building by architects Chaix &

Johnson, now Brotman Hall. KBA's last "up the hill" project was their 1972 University Student Union, which was incorporated into the hillside between upper and lower campus and had been planned a decade prior (Bernstein and Briegel 1989; Horn 1970a, 1970b; Kingsley-Wilson 2015).

Coinciding with the decision to concentrate development on the lower campus was a subtle shift in the campus architecture. Beginning in 1975 with Brotman Hall and the Isabel Patterson Child Development Center, buildings began to vary from the Mid-Century Modern styles and campus architectural aesthetic established in the 1950s and formalized by Killingsworth in his 1966 architectural vocabulary document. Brutalism, various non-conforming roof forms, and Post-Modern styled buildings emerged on campus during this era, still under the consultation of Killingsworth. While new designs for the most part retained brick and concrete materials and flat roofs, more modern materials such as metal panel cladding and glass curtain walls were introduced. Some buildings still adhered to the required materials and color palette while others added new aspects such as the College of Business black-glass curtain wall exterior, and the bright pastels of the Post-Modern Carpenter Performing Arts Center and accompanying Dance Theater (Gibbs 2019; Killingsworth 1994).

From 1975 onward, development on the campus not only shifted to developing lower campus and deviating from the established campus architectural vocabulary, but also shifted from a focus of keeping up with student enrollment growth to also focus on fulfilling selective needs of the campus. One such selective need was the Microbiology building. The Microbiology department was established in 1961 and for 18 years operated out of classrooms and laboratory buildings throughout the campus. In 1979, the new Microbiology Building was completed, designed by Kenneth Wing Jr. of Houston firm Caudill Rowlett Scott in 1975, as well as Lanaman & Associates, and John A. Martin & Associates. This building was incorporated into the upper campus; however, it was tucked "behind" the other science buildings so it didn't crowd the central quadrangle lawn, still appropriately keeping to Horn's desire to keep upper campus from being over-crowded. Another selective need was the University Music Center (also called the Bob Cole Conservatory), a performance space that had been called for since the 1970s. Designed by Gibbs & Gibbs in 1979 with consulting architect listed as KBA, the music building was completed and opened for 600 students in 1982. The University Music Center was built on the northeastern edge of the university property, north of the athletic fields along Atherton Street (Gibbs & Gibbs 1979; LAT 1979; 1982).

Other installations on campus were designed to enhance its appearance rather than to fulfill an operational capacity need, such as the Earl Burns Miller Japanese Garden. In 1978, Lorraine Miller Collins, a local Long Beach philanthropist, offered to donate funds for a two-acre Japanese-style garden addition to the University Arboretum. Ed Lovell, still serving as the campus landscape architect, designed a garden that met with her approval in 1980, consulting with Killingsworth in the process. By spring of 1981, the garden was planted and dedicated, though it would be years before it would mature (LAT 1978, 1981; Lovell 1980).

In 1982, Killingsworth's firm, KBA, dissolved after Jules Brady left the firm, and it reorganized into Killingsworth, Stricker, Lindgren, Wilson & Associates, Inc. (KSLW). As a result of the reorganization, Killingsworth was able to promise then-university president Horn that he could redouble his efforts on campus and be available for more consultation, while his firm continued to expand the national and international markets. This increase in effort is evident by the residence hall development: the Parkside College student residences (1983), the International House (1987) and the Housing and Residential Life office (1989). The firm Neptune & Thomas, Architects reprised their role as architect for Parkside College for the third phase of the ongoing housing projects. However, KSLW was listed as the project architect for both the International House and the Housing and Residence Life Offices. With the exception of the HRL building, all projects conformed to the original campus design guidelines: peach-red brick and painted concrete materials; flat roofs; and blocky, modular building plans incorporated into the hilly landscape (Bernstein and Briegel 1989; Killingsworth 1982; Kingsley-Wilson 2015; KSLW 1987a; LAT 1987; Volland and Mullio 2013).

In 1987, Stephen Horn resigned as university president and was succeeded by Curtis McCray in 1988. Whether through Horn's restricting of the budget or merely a changing of the guard, more and varied capital improvement projects on the campus were completed under McCray, including the Gibbs & Gibbs pyramid. Most of these buildings were added to the lower campus, including the Engineering and Computer Science building completed in 1989 by The Luckman Partnership, Inc.; the Carpenter Performing Arts Center by Gibbs & Gibbs in 1993 (Figure 11); the College of Business by Frank Homolka in 1993; and the University Art Museum and North Campus Library building by KSLW in 1993 (Bernstein and Briegel 1989; Gibbs & Gibbs 1990, 1993; Kingsley-Wilson 2015; KSLW 1987b, 1993).

Figure 11. Richard and Karen Carpenter Center at CSULB in 1993 (USC Libraries 1994)

In 1990, the roof of the University Music Center, designed by Gibbs and Gibbs (1982), collapsed in the night. This collapse crushed two pianos and the entire seating section of the hall. However, Gibbs & Gibbs had already been selected for a physical education arena to be built on the campus, so the roof collapse did not affect their standing with the university. The arena had been on both the 1978 and 1988 Campus Master Plan documents, which generally proposed placing a proposed new sports facility on lower campus, north of the athletics fields. Inspired by I. M. Pei's Louvre pyramid, Donald Gibbs chose a blue-tinted glass pyramid as the format for the new sports arena (Figure 12). The building notably did not conform to the campus' original architectural design and materials aesthetic; however, Gibbs & Gibbs gained the support of Jon Regnier, the head of physical planning, and Robert Maxson, the new campus president to push forward with the innovative design. McCray stepped down as president in 1993. Robert Maxson, Gibbs's supporter, had succeeded Curtis McCray in 1993 and was eager to innovate and breathe new life into the campus. The pyramid sports area was completed by 1994 for $22 million, with substantial funding from private donation and foundation funding. Renamed the Walter Pyramid, it quickly became a visual icon of the university, visible from all points on campus and from many places in Long Beach (Gibbs 2019; Gibbs & Gibbs 1993; Killingsworth 1967; Kingsley-Wilson 2015; LAT 1990).

Figure 12. Walter Pyramid at CSULB in 1996 (USC Libraries 1996)

By 1994, student enrollment had fallen from nearly 31,000 to 26,277 due to admissions restrictions and budget cuts. Maxson, who coined the phrase “Go Beach!” made it his goal to boost student and faculty morale amidst these budgetary restrictions. His tenure from 1994 through 2006 focused more on faculty relationships and student morale than building programs. As a result, fewer and smaller buildings were added to the campus during this period, including the Reprographics building in 1996; a new Central Plant Building in 1997; Athletics field restrooms in 2000; and a University Police Office in 2001. Killingsworth himself acknowledged that the campus had already moved far past his original vision of the campus from the 1960s. In 1994, the same year as the Walter Pyramid was completed, Killingsworth wrote to then-President Maxson and forwarded a collection of items for him for his personal library. Among these items was the original 1963 Campus Master Plan.). One of KSLW’s final projects for the campus was to oversee the 1996 renovations of the University Student Union, headed by KSLW partner Ronald Lindgren. Ed Killingsworth officially retired from KSLW in 2001, and passed away in 2004 (Killingsworth 1994; Kingsley-Wilson 2015; LAT 1992, 2004; Volland and Mullio 2013).

3.3 The Residence Life Program (1959-1989)

Student housing was not part of the original 1952 Long Beach State College’s master planning documents; however, the oversight was remedied as students and administration began to demand on-campus housing. Private developers controlled student housing options prior to 1959, accounting for all the student housing options near campus. Though sororities and fraternities provided housing options for select members, there were no organized housing options or any on-campus housing until 1959 (Gibbs 1953a).

In 1957, a four-year $13 million dollar building plan commenced to complete in-progress buildings and add more buildings to the campus: a new science building addition, a new fine arts building, a music building, a swimming pool, library addition, on-campus dormitories, and men’s gymnasium. Construction commenced in 1958, and in 1959 the first two on-campus residence halls were opened at what is now Hillside College: the Los Cerritos men’s dormitory and the Los Alamitos women’s dormitory. The construction of these two dorms was the initiation of Phase I of the university’s residence hall development program, adding 418 beds to campus. Los Cerritos and Los Alamitos Halls were designed by the State Division of Architecture and are located in the west section of campus. (Figure 13) Moreover, the residence halls were required housing for minors attending Long Beach State College, while adult students were encouraged to live off campus (Bernstein and Briegel 1989; Division of Architecture 1958; Kingsley-Wilson 2015; LBI 1957, 1958, 1959a; LBSC 1960).

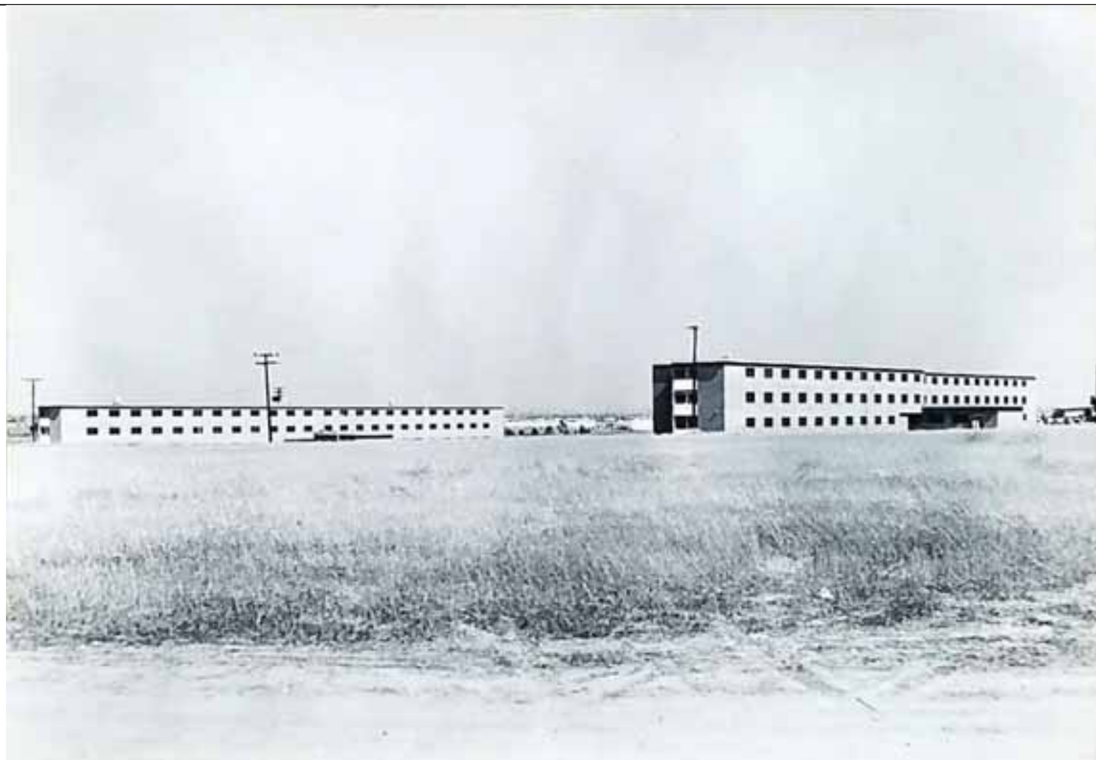

Figure 13. Los Cerritos and Los Alamitos, circa 1960 (History Collection CSULB Archives)

The 418 beds were immediately filled when they opened in fall of 1959, and rejected students were placed on a waiting list for the dormitories. By 1962, over 1,200 students were applying to live in the dormitories, most of which were turned away. Frank Bowman, the campus Housing Dean in 1962, managed the two residence halls, 14 fraternity and sorority houses, and 200 private homes for students, which could accommodate roughly 1,000 students of the total 12,000 full-time enrolled student body. The 1963 Campus Master Plan by Killingsworth accounted for an increase in student housing, adding six new dormitories to the area around Los Cerritos and Los Alamitos residence halls. More private dormitories aimed at students continued to proliferate, with two more co-educational dormitories opening off-campus in 1963. This 1963 private dormitory, roughly 1.5 miles from campus was taken over by the University at a later date and became known as the Beachside College campus residence halls (Bernstein and Briegel 1989; IPT 1963b; Kingsley-Wilson 2015; LBI 1959b, 1962b, 1962c, 1962d, 1965a; LBSC 1960).

The campus revealed plans in early 1965 to begin a residence hall project that would house an additional 450 students. The Pasadena architecture firm Neptune & Thomas and Associates was named as project architect for the upcoming project (Figure 14). Officially, Phase Two of the residence hall development program was initiated in 1967. A total of $14 million in state funding was earmarked for the campus for construction during the 1967-1968 year. These buildings included the completion of a maintenance yard and residence hall complex started the previous (1966-67) year. Other buildings initiated during this period of campus expansion was an engineering building, a psychology building, a nursing facility, a library addition to the south side of existing library, and the college union, which would use an estimated $4.5 million in private rather than state funds. The residence hall complex was named Hillside College and included six, two-story residence halls with a 450-bed capacity, an office building, and a dining hall, located directly west of Los Cerritos and Los Alamitos Halls. The Office and two dormitories were finished first, followed by the dining hall and the remaining buildings. Pasadena architects Neptune & Thomas and Associates consulted with campus architect Edward Killingsworth on the design of the complex, which was completed by 1970 (CSULB 2019; LBI 1965a, 1967; Neptune & Thomas and Associates 1966).

Figure 14. Neptune & Thomas and Associates rendering of Hillside Campus (History Collection, CSULB Archives)

By the 1970s, capacity issues had resurfaced. The University had a 600-bed residence hall addition proposed in every Five Year Capital Outlay State Program since 1972. Physical Planning and Development Director Jon H. Regnier and University President Stephen Horn briefly considered applying for federal funding from the Department of Housing and Urban Development and City of Los Angeles to erect dormitories for the 1984 Olympics, which could be reused as university dormitories. While this plan failed to materialize, funding for new dormitories was secured in 1980 that would add 500 new beds to the current 868-bed capacity. Phase Three of the residence hall development program was initiated in 1981 when the campus continued to expand and the demand for on-campus housing increased. Ground-breaking was held in March 1983 for the five two-story residence halls. This development was named Parkside College (also known as the Parkside Residential Community) and included nine, two-story residence halls, an office, and a dining hall located in the northwest section of campus and directly north of Hillside College. Neptune & Thomas and Associates also designed these buildings with assistance from Jennings Engineering and landscape design by Edward Lovell.

Phase Four of the residence hall development program added five new buildings to Parkside College and provided several updates of systems already in place. This included the implementation of an irrigation and planting plan by Lovell, adding telephone distribution systems, implementing a lighting and power plan, and redrawing facility plans for existent building's mechanics and plumbing. Phase Four was completed in 1985. (CSULB Office of University Publications 1983; CSULB Public Affairs 1980; Horn 1978; Neptune & Thomas and Associates 1981, 1984; Regnier 1978).

In 1987, a final residence hall opened on campus called the International House; designed by KSLW in 1986. Intended as a community for International and local American students to live side by side, the International House provided a dining hall and facilitated communal living with two-person rooms in-suite formats with a common, shared bathroom, and common lounges with libraries. In 1987, KSLW also designed the Housing and Residential Life Office, located just north of Neptune & Thomas and Associates' Parkside College residential community. By 2008, the campus had 18 two- and three-story buildings providing 1,922 beds on campus, providing housing for less than 10% of full-time enrolled students. Roughly 2,000 more beds were called for in the 2008 Campus Master Plan, but have not yet been implemented (Bernstein and Briegel 1989; CSULB 2008a; KSLW 1986; LAT 1987).

3.4 Architects and Landscape Designers

Project Architect: Edward Killingsworth and Killingsworth, Stricker, Lindgren, Wilson & Associates, Inc. (KSLW) (1982-2001)

Edward Abel Killingsworth was born on November 4, 1917, on his family's homestead in Taft, California to Walter and Gertrude Killingsworth. Missouri-natives, Walter and Gertrude moved to Taft in the early 1910s to escape the rigors of their religious families and to seek new work opportunities presented by the discovery of oil in the area. As employment opportunity in the Taft area dwindled, Walter relocated his family to Huntington Beach, California in 1920, and then to Long Beach, California in 1921. The family purchased a new home on Temple Avenue in a tract of Craftsman-style bungalows. Their move to Long Beach coincided with the discovery of oil on Signal Hill in the center of Long Beach. Using the skills he had honed in Taft as an oil-rigger, Walter quickly invested in the seventh oil well to be drilled on Signal Hill, allowing the family to tap into the immense prosperity that characterized the Long Beach Community in the early part of the twentieth century (Volland and Mullio 2013:16; LBCVB 2019).

The growth and prosperity of Long Beach began in the 1880s when the Southern Pacific and Santa Fe Railroads held a competition there, attracting visitors from near and far. The opening of the Pacific Electric trolley line in Long Beach in July 1902 prompted Long Beach to be seen as a beautiful location on the shore that was now easily accessible from Los Angeles. As a result, the city became the fastest growing metropolis in the United States between 1902 and 1910. The booming real estate market in Long Beach first attracted wealthy families who commissioned bold, modern homes by famed architects such as Charles and Henry Greene and Irving Gill. As the population increased, the development in Long Beach evolved and expanded to include residential high-rises and many of the City's iconic landmark buildings (Volland and Mullio 2013: 16; Addison 2017; LBCVB 2019).

The ambitious architectural environment of Long Beach surrounded Killingsworth as he matured into a young man. He showed an early predilection for painting and sculpture, and was encouraged to explore many artistic outlets by his mother and various creative arts teachers at Woodrow Wilson High School in Long Beach (Volland and Mullio 2013: 16-7).

Killingsworth began his undergraduate studies at the University of Southern California (USC) in 1934. He enrolled in the College of Architecture and Fine Arts at USC, as he initially intended to obtain a degree in fine arts. He set about taking as many fine arts courses as he could, but overtime, he decided that the field of architecture would serve as the most practical outlet to express himself creatively (Volland and Mullio 2013: 18; LAC 2019a).

The Dean of the College of Architecture and Fine Arts at USC, Arthur Clason Weatherhead, encouraged a provincial approach to architecture which emphasized blending and incorporating local context into design. Killingsworth studied under forward-thinking architecture professors such as Clayton Baldwin, whose parochial method veered away from the traditional Beaux-Arts approach. The strict doctrine of Beaux-Arts was replaced by an encouragement to explore how design could be adapted to highlight each site independently. An article in the Los Angeles Times from August 1937 noted that "Prof. Baldwin is the exponent of a new plan of teaching architecture with the use of models built by students together with motion pictures to gain proportion and lines before pencil sketches are allowed (LAT 1937: 70)." Through the guidance of professors such as Baldwin, Killingsworth graduated with an Architecture degree, honors and the American Institute of Architects (AIA) medal for "the highest academic grades for the five year period (Volland and Mullio 2013: 19)" in 1940. The emphasis on site-specific approach and attention to spatial relationships in architecture imparted onto him at USC by his professors would stay with him throughout his life as the unifying philosophy behind his designs. Killingsworth continually insisted that his penchant for the arts and visual language is what gave him an edge in the field of architecture (Volland and Mullio 2013; Howell-Ardila 2010; Edward Cella Art + Architecture 2019).

Although Killingsworth designed several buildings professionally before the completion of his degree, he procured a job with well-known Long Beach architect Kenneth S. Wing after graduating from USC. It was at Wing's firm that Killingsworth would work alongside two other young architects, Jules Brady and Waugh Smith, who would eventually form the first iteration of Killingsworth's architecture firm, Killingsworth, Brady

& Smith. However, the American entrance into WWII in 1941 meant that Killingsworth only worked professionally for six months before being drafted to serve in the U.S. Army (Volland and Mullio 2013; LAC 2019b).

Killingsworth completed basic training in San Diego in 1941, at which time he was transferred to Portland, Oregon where he joined the 29th Engineer Battalion, a Topographic unit of the Army Corp. of Engineers. While completing Officers Candidate School at Fort Belvoir, Virginia, Killingsworth received a contaminated Yellow Fever vaccination that caused him to develop severe jaundice. He was confined to the hospital for nearly five months, after which he managed to complete Officers Candidate School and was assigned to a topographic unit stationed at Camp McCoy, Wisconsin (Volland and Mullio 2013).

Not long after his marriage in 1943, Killingsworth was sent abroad to serve in the European Theatre in November of 1943. He had been assigned as an operations officer in Company B of the 654th Topographic Battalion, responsible for creating highly accurate topographic maps and models to aid in the planning and execution of strategic battles. It was the 654th that was tasked with the creation of a 1:2,500 scale model of Omaha Beach to work out the logistics prior to the invasion at Normandy. Authors Jennifer Volland and Cara Mullio succinctly summarize the effect that Killingsworth's time in the Army had on his approach to architecture from that point forward, stating "…it heightened his fondness for the topographical world, allowing him to better assess the relationship between landscape and architecture…The detail-oriented job of mapping engrained in the budding architect a natural, intuitive response to assessing environmental conditions and creating appropriate solutions" (Volland and Mullio 2013; Fraser 2014).

Killingsworth's station in Europe also gave him an opportunity to admire up close many of the buildings which formed the canon of classical Western Architecture. His unit traveled through Europe, staying in various country manors in England, Belgium, France, and Germany to avoid attack. Killingsworth marveled at the built forms he encountered in these places, and by the end of his service term, he was well-versed in the architecture of many iconic European cities. This love of travel and passion for architecture in various parts of the world was formulated during his time in WWII, but would continue with him through the course of his life (Volland and Mullio 2013).

Killingsworth returned from Europe in 1945 and picked up his life in Long Beach roughly where he left off. He resumed his position with Kenneth S. Wing's frim and began taking on many of the modern and contemporary designs commissioned by the firm, while Wing continued with the traditional commissions. In 1951 while still under the auspice of Wing, Killingsworth designed a small combination office/residence for his in-laws, Jack and Susan Baird on the corner of Los Alamitos Boulevard and Green Avenue to contain their real estate and insurance business. It was this simple, Post and Beam-style design that caught the eye of *Arts and Architecture* editor, John Entenza, who decide to include it in the January 1952 issue. It was featured in a section discussing the Honor Awards bestowed by the Southern California and Pasadena Chapters of the AIA. The half-page devoted to the building includes a section of impressions as they were relayed by the AIA jury stating “The entire jury was captivated by the directness and simplicity, so completely free from false motivation. The Modest structure has graceful distinction. The private out-of-door living on the human side, and the simple panels for ventilation between the rafters on the technical side, deserve mention (Arts and Architecture 1952: 31).” This mention was Killingsworth’s first feature in a major architecture publication, and marks the beginning of a life-long relationship with Entenza, who would go on to feature Killingsworth’s work in *Arts and Architecture* about thirty more times over the course of his career. Additionally, it was this early encounter that would move Entenza to include Killingsworth in the Arts and Architecture Case Study House Program, which had begun in 1945. (Volland and Mullio 2013; Arts and Architecture 1952; LAC 2019a; Edward Cella Art + Architecture 2019; LAT 2004).

In 1953, Killingsworth, Jules Brady and Waugh Smith left the Kenneth S. Wing firm and started their own practice, which they named Killingsworth, Brady and Smith (KBS). The designs produced jointly by the firm were thoroughly influenced by Killingsworth’s emerging signature style, which included Post-and-Beam style buildings with: spacious interior courtyards containing water features and secluded patios; tall doors and entry spaces; flat roof structures; open, light-filled rooms aided by large quantities of floor-to-ceiling windows and walls; and a seemly interplay between the unique topography of the site. In 1955, the firm completed their new office in north Long Beach, which exemplified their signature style and approach to site-specific architecture (Volland and Mullio 2013; LAT 2004).

The firm would continue to produce innovative designs through the 1950s within the context of a California Architecture movement geared towards modernity. This movement sought to challenge prescribed built forms in favor of a new architectural vocabulary featuring inexpensive, mass produced materials that had been innovated during the restrictive war-time period which were then used in new applications. Southern California in particular became a hotbed of modernist design, and KBS was able to collaborate with innovative landscape architects like Edward Lovell, and Interior Designers, Stan Young and John Nicholson of Frank Brothers Furniture. (Arts and Architecture 1957, 1959a, 1959b).

Of the six Case Study Houses KBS designed, four were completed, Triad (#23) and the Frank House (#25). The first Case Study House was actually a cluster of three houses called Triad, which was located in La Jolla, California. Triad was completed between 1959 and 1960 and was featured in the March 1961 issue of *Arts and Architecture*, which described the design intent of the project, explaining that “Each house is completely different from the others, yet the sitting of the three with the continuity of materials, detailing, form and landscaping provides a unity to the whole” (Arts and Architecture 1961: 18).

The Frank House, completed in 1962, is lauded as the most successful of the Case Study Houses and was the subject of much acclaim during the 1960s. The house was commissioned by Edward Frank, of Frank Bros. Furniture, to fill a waterfront lot along the Rivo Alto Canal in the Naples area of Long Beach, California. The October 1962 issue of *Arts and Architecture* featured the completed design, and explained that “One of the primary concerns in the planning of the house was that it blend with its surroundings and become a good neighbor, rather than an oddity or a solo performance. Now that the project is complete, this seems to have been successfully accomplished" (Arts and Architecture 1962).

During the period that the firm was designing award-winning residential architecture, they also ventured into the realm of commercial, educational and hospitality- oriented architecture with daring commissions such as the Alondra Junior High School (1959), the El Paso Hilton (1959) and the Cambridge Office Building (1960). These designs, among others, are representative of how Killingsworth, Brady and Smith approached the unique needs of each type with their signature attention to the questions of how and why the spaces needed to function to best aid the use of the occupants.

Summary of Killingsworth Projects

Following Killingsworth's death in 2004, his firm, which adopted several names depending on the current principals, compiled a comprehensive list of projects completed by him during his lifetime, amounting to just under 2,000. The following list, while not exhaustive of the projects completed by Killingsworth during his career, is focused on his work within Long Beach, California, and on projects located elsewhere (indicated by an asterisk) which epitomize Killingsworth's signature curated, site-specific, design approach (Volland and Mullio 2013, p. 318-321; IPT 1953, 1959; LAT 1952, 1960, 1983; LBI 1964).

- Baird House-Office: Long Beach, CA (1951)
- Killingsworth Apartments: Long Beach, CA (1952)
- Lovell Residence: Long Beach, CA (1953)
- McIntosh Residence (Collaboration – Kenneth S. Wing): Long Beach, CA (1954)
- Killingsworth, Brady and Smith Office: Long Beach, CA (1955)
- Lafayette Lanais: Long Beach, CA (1956)
- Opdahl Residence: Long Beach, CA (1957)
- *Robertson Residence: Laguna Beach, CA (1958)
- *Marina Shores Development: Seal Beach, CA (1958)
- Alondra Junior High School: Paramount, CA (1959)
- *El Paso Hilton Inn: El Paso, Texas (1959)
- Melvin Killingsworth Home Remodel: Long Beach, CA (1959)
- *Triad, Case Study House(s) #23: La Jolla, CA (1959-1960)
- Cambridge Office Building: Long Beach, CA (1960)
- Hof's Hut Restaurant: Long Beach, CA (1960)
- Long Beach County Building (Collaboration – Architects Associated): Long Beach, CA (1960)

- Long Beach Public Safety Building (Collaboration – Architects Associated): Long Beach, CA (1960)
- Killingsworth Personal Residence: Long Beach, CA (1961)
- Frank Brother's Furniture Remodel: Long Beach, CA (1961)
- Frank House, Case Study House #25: Long Beach, CA (1962)
- *Buffum's Department Store: Palo Verde, CA (1963)
- Duffield Lincoln-Mercury Agency: Long Beach, CA (1963)
- Bookstore Addition, CSULB: Long Beach, CA (1963)
- *Kahala Hilton: Honolulu, Hawaiʻi (1964)
- DeGolia and Van Dyke Medical Office Building: Long Beach, CA (1964-65)
- *Buffum's Department Store: Lakewood, CA (1965)
- *Kukui Mortuary: Honolulu, Hawaiʻi (1965)
- *Ecumenical Religious Center, University of Southern California: Los Angeles, CA (1966)
- *Student commons and Bookstore, University of California, Riverside: Riverside, CA (1967)
- *Atlantic Research Corporation Missile Systems Division: Costa Mesa, CA (1968)
- Seaport Village: Long Beach, CA (1969)
- Brady Residence: Long Beach, CA (1970)
- College Student Union, CSULB: Long Beach, CA (1971)
- *Residential Apartments, University of California, Santa Barbara: Goleta, CA (1972)
- *Seoul Hilton: Seoul, South Korea (1972)
- *Buffum's Department Store: Laguna Hills, CA (1973)
- *Elkhorn Village: Sun Valley, ID (1974)
- *Jakarta Hilton: Jakarta, Bali (1974)
- Marina Pacifica Village: Long Beach, CA (1974)
- Headquarters Building, CSULB: Long Beach, CA (1975)
- *Kapalua Bay Hotel: Maui, Hawaiʻi (1977)
- Long Beach City Hall and Public Library (Collaboration - Allied Architects): Long Beach, CA (1977)
- Terrance Theater (Collaboration - Allied Architects): Long Beach, CA (1978)
- *Boca Beach Club and Cabanas: Boca Raton, CA (1980)
- Spinnaker Coves: Long Beach, CA (1982)

- *Mauna Lani Bay Hotel and Terrace Condominiums: Hawaiʻi, Hawaiʻi (1983)
- *Halekulani Hotel: Honolulu, Hawaiʻi (1984)
- *Phoenix Crescent Hotel: Phoenix, AZ (1985)
- Long Beach Airport Marriott: Long Beach, CA (1986)
- *Marriott Desert Springs Resort: Palm Desert, CA (1987)
- International House, CSULB (1988)
- *The Phoenician: Scottsdale, AZ (1988)
- *Tomamu Golf and Ski Resort: Hokkaido, Japan (1988-92)
- *Bali Hilton: Nusa Dua Beach, Bali, Indonesia (1990)
- Main Library Remodel, CSULB (1990)
- North Campus Library (Horn Center), CSULB; Long Beach, CA (1991)
- Student Union Additions and Alterations, CSULB: Long Beach, CA (1996)

Landscape Architect: Edward Raymond Lovell, ASLA (1918-2008)

Edward R. Lovell was born on December 12, 1918 in Wenatchee, Washington. He moved to Long Beach, California with his family at the age of four, and attended Woodrow Wilson High School where he would meet fellow student Ed Killingsworth. After graduation, Lovell attended Oregon State University and soon after graduation moved near Carmel, California, where he married his wife Betty Lou in 1942. At this time, Lovell was enlisted in the U.S. Army as a captain in the artillery. During his service, Lovell entered the North African Campaign in Morocco and later participated in the invasion of Sicily and the invasion of Anzio, Italy in 1944. Upon leaving the Army, Lovell had risen to the rank of Major and was awarded a bronze star for his action in the invasion of Anzio. After Lovell returned from the war, he returned to Oregon State University to pursue a master's degree in landscape architecture (Ancestry 2019; LBPT 2008; Lovell 1988; CSULB 2008b; Barber 1978).

In 1950, Lovell returned to Long Beach with his wife and child, and became licensed as a landscape architect. In 1953, he became an American Society of Landscape Architect member. For the next half a century, Lovell had his own practice as a landscape architect, primarily designing gardens for residences in the Long Beach, California area, as well as commercial and educational design projects. This work was mostly referral based, according to an oral history given by Lovell in 1988. He worked closely with local architects such as Killingsworth, Brady and Smith, and later KBA and KSLW as well as Hugh Gibbs (Lovell 1988).

While Lovell had a range of experiences and work products, his most notable commission was working as a landscape architect on the CSULB campus. During his time on the campus, he and Killingsworth collaborated on multiple projects that eventually led to the campus as it appears today. Lovell was first hired as a landscape architect by Long Beach State College in 1964 on the recommendation from former schoolmate Ed Killingsworth. The two immediately collaborated to implement the "Peach Corps" tree-planting project, which introduced the iconic 3,000 flowering Helen Borchers peach trees in 1965. Lovell participated in minor improvement programs around campus until 1968 when he began took over as landscape architect for the Nursing Building, from State Division of Architecture employees B.J. Dumbacher and K.Y. Lee, who had done many of the previous planting and irrigation plans on campus (Bernstein and Briegel 1989; Division of Architecture 1968; Harmon 1964; Irwin 1964; Lovell 1988; LBI 1965b).

Lovell's second most notable work was his design of the Earl Burns Miller Japanese Garden on the CSULB campus dedicated in 1981. Lorraine Miller Collins, Earl Burns Miller's widow, selected Lovell to design the 1.3-acre garden in memory of her late husband who admired Japanese garden design. Throughout his career, he was involved in the Long Beach Beautiful movement, which worked to revitalize the city's downtown. Ed Lovell retired from private practice in 1990, though he still took commissions from CSULB after retirement. In 2003, Lovell was awarded the Lifetime Achievement Award from Long Beach Heritage and was a long-time member of the ASLA. Lovell died on April 5, 2008 at his home in Long Beach (Ancestry 2019; LBPT 2008; Lovell 1988; CSULB 2008b; Barber 1978).

Other known works span the years between 1953 and 1996, a few years after his official retirement, and include landscape design and planting plans for the following:

- 48 private residential gardens, various addresses, Long Beach
- Huntington Marina, 16000 Mariner Drive, Huntington Beach
- Building, 2750 Signal Parkway, Signal Hill
- Office Building 2700 Signal Parkway, Signal Hill
- Unitarian Universalist Church, 5450 Atherton St, Long Beach
- Sanctuary Garden for St. Lukes Lutheran Church, 5633 Wardlow Rd, Long Beach
- First Lutheran Church, Atlantic Ave at 9th St, Long Beach
- Community Hospital of Long Beach, Long Beach (1959)
- Long Beach Memorial Medical Center, Long Beach (1960)
- Pacific Hospital of Long Beach, Long Beach (1964)
- Fountain Area, Lakewood Country Club, Lakewood
- Proposed fountain, Virginia Country Club, Long Beach
- Nursing Building planting plan, with State Division of Architecture, CSULB (1969)
- Hillside College residence halls, with Neptune & Thomas and Associates, CSU Long Beach (1969-1970)

- Psychology Building, with Gibbs & Gibbs AIA, CSULB (1970)
- Theater Arts Building planting plan, with Frank Homolka and CSULB (1971)
- University Student Union planting plan, with Killingsworth Brady & Associates, CSULB (1972)
- Revisions for Cart Path, Virginia Country Club with Donald Gibbs, Long Beach (1972)
- Brotman Hall (Administration Building) planting plan, with Chaix & Johnson, CSU Long Beach (1975)
- Social Science and Public Affairs planting plan, with Clinton Marr, CSULB (1976)
- Microbiology Building planting plan, with Caudill Rowlett Scott, Lanaman & Associates and John A. Martin & Associates, CSULB (1979)
- Medical Offices, 2890 and 2898 Linden Ave with Jones, Poper, and Lockett, Long Beach
- English building courtyard (landscape study) for Long Beach City College with Richard Poper, Long Beach
- Bookstore addition at Long Beach City College with Richard Poper, Long Beach
- Office and convenience store, 5602 Long Beach Blvd, Long Beach
- Bank of Lakewood, Lakewood
- Earl Burns Miller Japanese Garden, CSULB (1981)
- University Music Complex, with Gibbs & Gibbs, CSULB (1982)
- Parkside College residence halls, with Neptune & Thomas and Associates, CSULB (1983-1984)
- Residence, 1729 Studebaker Rd, Long Beach
- Long Beach Day Nursery (North Facility), 481 Plymouth, Long Beach (1988)
- Housing and Residential Life Office, with KSLW, CSULB (1989)
- Engineering and Computer Science building planting plan, with The Luckman Partnership, CSU Long Beach (1989)
- Hugo Neu-Proler Company, 901 New Dock St, Terminal Island
- Untitled, First St at Pine Ave, Long Beach
- College of Business, with Frank Homolka, CSULB (1993)
- Applied Arts and Science Renovation w/ Neptune Thomas Davis, CSULB (1994)
- Faculty Office for Home Economics w/ Neptune Thomas Davis, CSULB
- Infant Toddler Center, CSULB (1995)
- Reprographics Building, CSULB (1996)
- Platform at Lake Skimmer, Japanese Garden, CSULB

3.5 Contemporary Style (1945-1990)

Buildings designed in the Contemporary Style between 1945 and 1990 can be found throughout the United States and were common in California (McAlester 2013). The style rejects traditional decoration and exterior sleekness in favor of interior spaces, so much so that the plans and facades of the building are less unifying and more a reflection of the interior uses of space. The style is also characterized by relationships between outdoor spaces and interior rooms; in residential architecture, this can manifest itself by a connection between interior living space and gardens; in commercial spaces, it can take the form of connections between office space and courtyards, gardens, or parks.

Key character-defining features of the Contemporary Style include the following (McAlester 2013, Sapphos 2009):

- Low pitched, gabled roofs
- Exposed roof beams
- Wide, overhanging eaves
- Windows generally present in gable ends
- Materials (wood, brick, glass, concrete) evoking a variety of textures
- Asymmetrical main façade
- Recessed or obscured entry

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4 HISTORIC RESOURCES SURVEY

4.1 Methodology

Dudek architectural historians Kate Kaiser, MSHP, completed a reconnaissance-level survey of the project site on June 4, 2019. The built environment survey entailed taking detailed notes and photographs of all buildings and structures, documentation of character defining features, spatial relationships, landscaping, observed alterations, and overall existing conditions. The survey was restricted to the exteriors of the buildings. All field notes, photographs, and records related to the current study are on file at Dudek's Pasadena, California, office.

4.2 Description of Surveyed Resources

The project site contains the HRL building and surrounding environs. The HRL building is located in the northwestern portion of campus adjacent to the Parkside College dormitories and the Isabel Patterson Child Development Center. The HRL building and grounds are separated by a gate from other elements within the project site, including the University Garden (added circa 2014); a volleyball court (added circa 1995); an open, undeveloped grass field; and the Isabel Patterson Child Development Center parking lot, which is accessed off an unnamed road to the south. The project site also includes a small area for two proposed parking spaces directly adjacent to the west side of the Parkside College complex.

The only potential resource within the project site is the HRL building. Although not yet 50 years old, the HRL building, which is proposed for demolition, was designed by master architect Edward Killingsworth. For this reason, the HRL building was recorded and evaluated for historical significance. Other built and landscape elements within the project (i.e., the University Garden, volleyball court, and parking areas) did not merit further evaluation/consideration in this report either because of their age or because they were not constructed as part of the HRL building designed by Killingsworth.

A description of the HRL building and its setting is provided below.

Housing and Residential Life Building

The HRL building is one story, designed in in 1987 in the Contemporary Style by KSLW (Figures 15, 16, 17, and 18). As previously discussed, it is located in the northwestern portion of the CSULB campus, immediately north of the Parkside College student residential community and immediately east of the Isabel Patterson Child Development Center. The HRL building is an irregular L-shaped in plan, and features a hipped, standing-seam, metal-clad roof with a wide overhang and closed eave. Exterior wall cladding consists of textured cement plaster, with smooth-painted wood trim around fenestration and under the soffit. Fenestration units consist of a single and paired fixed glass window with a bronze-colored solar tint over a two-light, aluminum, sliding window with a bronze-colored solar tint; and single fixed glass windows with bronze tint. Several windows projected from the wall plane on the east and west elevations, the remainder were flush. Doors consist of a single pair of metal-framed glass doors on the west (main) elevation. The building has an addition on the north side, designed in 1989 and constructed in 1990, with cladding, roofing, and fenestration that are indistinguishable from those of the original building. The northern and eastern perimeters of the project site are lined with trees and shrubs, consisting of (but not limited to):

- 8 Brisbane box (*Lophostemon confertus*)
- 3 Canary Island pine (*Pinus canariensis*)
- 5 carrot wood (*Cupaniopsis anacardioides*)
- 1 evergreen pear (*Pyrus kawakamii*)
- 1 glossy privet (*Ligustrum lucidum*)
- 10 lemon-scented gum (*Corymbia citriodora*)
- 3 pink melaleuca (*Melaleuca nesophila*)
- 2 red ironbark (*Eucalyptus sideroxylon*)

The trees on the northern side are set back from East Atherton Street and were planted mostly along an existing fence line. Turf lawn exists between the fence line and East Atherton Street.

Figure 15. Main (west) elevation, view to east (IMG_3497)

Figure 16. South elevation, view to north east (IMG_3490)

Figure 17. South and east elevations, looking northwest, IMG_3485

Figure 18. North and east elevations from Earn Warren Drive, (IMG_3478)

Alterations

The following alterations were identified through review of property record research and/or during the pedestrian survey conducted on June 4, 2019:

- Addition to north elevation, KSLW 1989
- Added volleyball court, CSULB Physical planning, 1995

Character-Defining Features

- Textured-finish cement plaster cladding
- Hipped, low-pitched metal roof
- Wide overhanging eaves
- Large tinted fixed windows and smooth wood surrounds
- Integrated landscaped elements such as planted walks and a tree screen

5 SIGNIFICANCE EVALUATION

One potential historical resource was identified within the project site as a result of the survey: the HRL building. The following provides an evaluation of the HRL building located on the CSULB campus in consideration of NRHP, CRHR, City of Long Beach, and CHL designation criteria and integrity requirements. A DPR form for the HRL building is provided in Appendix C.

5.1 NRHP/CRHR/City Statement of Significance

Criterion A/1/A: That are associated with events that have made a significant contribution to the broad patterns of our history.

Archival research did not find any association with events that have made significant contributions to the broad patterns of local or regional history. Research indicates that the HRL building was completed in 1989 and is the most recent component of the on-campus housing residence halls and support buildings, built after the multiphase residence hall development program, which constructed the Hillside College and Parkside College student housing. The building was not constructed during any notable periods of increased development, such as the late 1970s, which saw the construction of a handful of classroom buildings, faculty offices, facilities management buildings, and science laboratories as a result of state funding increases. The building is not specifically called for in any applications for funding to the State of California, and was notably excluded from the 1987 allocation of $12.5 million in funding from the State of California, which was used for the School of Business building, a Parking Structure, the International House residence hall, the North Campus Library, the art museum, a parking lot, School of Engineering additions, Fine Arts auditorium, and dance facility (IPT 1987).

While not included in the original 1963 KBA Campus Master Plan document, the HRL building was needed to support the growing residence hall program and required more administrative oversight. Although the property is part of a trend of overall growth, there is no indication that the construction of this building marked a pivotal point in the history of CSULB. Additionally, it is not known to be directly associated with events that have made a significant contribution to the history of the nation, state, or city. Therefore, the property does not appear eligible under NRHP/CRHR/City Criterion A/1/A.

Criterion B/2/B: That are associated with the lives of persons significant in our past.

Archival research did not indicate that the building has any direct association with people who are known to be historic figures at the national, state, or local level. As such, this property is not known to have any historical associations with people important to the nation's or state's past. Due to a lack of identified significant associations with important persons in history, the HRL building does not appear eligible under NRHP/CRHR Criterion B/2/B.

Criterion C/3/C: That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

The HRL building is an unremarkable Contemporary Style small-scale office building designed by Killingsworth, Stricker, Lindgren, Wilson & Associates, Inc. (KSLW), headed by master architect Edward Killingsworth, with landscape design by Edward R. Lovell. The building was designed in 1987 and completed in 1989. The character-defining features of this building are its textured cement plaster wall cladding, contrasting smooth painted fenestration trim, and its hipped, low-pitched, metal-clad roof. While many of these recall a few elements of Contemporary Style such as the asymmetrical main façade and low-pitched roof, the building is not considered exemplary of the style.

The HRL building notably lacks the architectural vocabulary present in the rest of the campus: Mid-Century Modern-influenced designs; flat roofs; peach-colored brick, white or tan painted concrete, and mosaic aggregate panel accents; metal sunscreens over windows; and fully incorporated landscape design elements including plantings, colored concrete and brick walkways, covered walkways and concrete canopies; and white brick retaining walls. Because it does not match the overall campus palette, and by itself is an unremarkable example, the building cannot be said to embody the distinctive characteristics of an architectural style.

The building is designed by KSLW, which is headed by master architect Edward A. Killingsworth. However, being designed by Killingsworth or his firm does not by itself merit eligibility under this criterion. According to National Register Bulletin 15:

> The property must express a particular phase in the development of the master's career, an aspect of his or her work, or a particular idea or theme in his or her craft. A property is not eligible as the work of a master, however, simply because it was designed by a prominent architect. For example, not every building designed by Frank Lloyd Wright is eligible under this portion of Criterion C, although it might meet other portions of the Criterion, for instance as a representative of the Prairie style (NPS 1990: 20).

Interpreted for the HRL building, this means that even though the building is designed by a master architect, it was not designed in Killingsworth's specified architectural vocabulary for the campus, is not an exceptional or original design by Killingsworth, and is not representative of a period of development or design in Killingsworth's career. Therefore, the HRL building cannot be said to represent the work of Edward A. Killingsworth.

This evaluation demonstrates that despite being a Killingsworth-designed building, the HRL building is not considered a significant or particularly good example of his body of work. As such, the HRL building does not appear eligible under NRHP/CRHR Criterion C/3/C.

Criterion D/4/D: That have yielded, or may be likely to yield, information important in prehistory or history.

There is no evidence to suggest that this property has the potential to yield information important to state or local history. Therefore, the HRL building does not appear eligible under NRHP/CRHR Criterion D/4/D.

5.2 California Historical Landmark Statement of Significance

In consideration of the fact that the HRL building is not yet 50 years of age and does meet NRHP, CRHR, or City designation criteria, the HRL building would not qualify for CHL designation.

5.3 Integrity Discussion

Integrity is the ability of a property to convey its significance. To be listed in the NRHP or CRHR, a property must not only be shown to be significant under the NRHP designation criteria, but it also must have integrity. The seven aspects of integrity are location, setting, design, materials, workmanship, feeling, and association. In order to retain historic integrity “a property will always possess several, and usually most, of the aspects” (NPS 1990).

- The HRL building retains retain integrity of location. The location of the building has never shifted nor has it they been relocated since its construction.

- The HRL building does not retain integrity of design, as there was a comparably large addition to the north elevation added in 1989, changing the original plan and massing of the building. This addition is visible from the Earl Warren Drive right-of-way and from the main (west) elevation.

- The HRL building does not retain integrity of setting. The building was the last to be constructed among the northwest campus buildings, which include the Parkside College campus residence halls, the Isabel Patterson Child Development Center and the Recycling Center; however, the original landscaping around the building has been altered by the addition of volleyball courts.

- The HRL building retains integrity of materials. The original wall cladding and roofing materials on the original 1987 KSLW drawing set appear unaltered, and the north addition appears to have used identical materials to the original building. No alterations to building materials was apparent from university physical planning files nor observed during survey.

- Similar to materials the HRL building retains integrity of workmanship, the physical evidence of the craftsmanship required to create the building is still in place.

- The HRL building retains integrity of feeling. The building still possess the ability to convey the feeling of a late 1980s small office building, however, the building’s design and materials appear to not share the overall campus architectural vocabulary, nor is the building a focal piece that does to have to follow these architectural guidelines.

- Finally, the building is not known to be linked within any significant historical events or individuals. Therefore, it does not retain integrity of association.

6 FINDINGS AND CONCLUSIONS

The HRL building was evaluated for NRHP, CRHR, and City of Long Beach designation criteria and integrity requirements. As a result of the evaluation, the property was found not eligible under all designation criteria due to a lack of significant associations and compromised integrity. Therefore, the HRL building, is not considered an historical resource under CEQA, nor does it qualify for listing in the Master List of State-owned resources.

As a result of the significance evaluation, the proposed project would have a less than significant impact on historical resources under CEQA.

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APPENDIX A

Preparer's Qualifications

Samantha Murray, MA

Historic Built Environment Lead / Senior Architectural Historian

Samantha Murray is a senior architectural historian with 13 years' professional experience in in all elements of cultural resources management, including project management, intensive-level field investigations, architectural history studies, and historical significance evaluations in consideration of the California Register of Historical Resources (CRHR), the National Register of Historic Places (NRHP), and local-level evaluation criteria. Ms. Murray has conducted hundreds of historical resource evaluations and developed detailed historic context statements for a multitude of property types and architectural styles, including private residential, commercial, industrial, educational, medical, ranching, mining, airport, and cemetery properties, as well as a variety of engineering structures and objects. She has also provided expertise on numerous projects requiring conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Education

California State University, Los Angeles
MA, Anthropology, 2013

California State University, Northridge
BA, Anthropology, 2003

Professional Affiliations

California Preservation Foundation

Society of Architectural Historians

National Trust for Historic Preservation

Registered Professional Archaeologist

Ms. Murray meets the Secretary of the Interior's Professional Qualification Standards for both Architectural History and Archaeology. She is experienced managing multidisciplinary projects in the lines of transportation, transmission and generation, federal land management, land development, state and local government, and the private sector. She has experience preparing environmental compliance documentation in support of projects that fall under the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA). She also prepared numerous Historic Resources Evaluation Reports (HRERs) and Historic Property Survey Reports (HPSRs) for the California Department of Transportation (Caltrans).

Dudek Project Experience (2014-2019)

Education

Castilleja School Project, City of Palo Alto, Santa Clara County, California (in progress). Dudek was retained by the City of Palo Alto to conduct a cultural resources study for the Castilleja Master Plan and Conditional Use Permit project. The study included a historical significance evaluation of the campus and related buildings and structures. Ms. Murray co-authored the cultural resources report and provided QA/QC.

Fullerton College Facilities Master Plan Program EIR, North Orange County Community College District, City of Fullerton, Orange County, California (in progress). The North Orange County Community College District (NOCCCD) is undertaking a comprehensive improvement and building program to make upgrades and repairs to existing buildings, as well as to construct new facilities to improve the safety and education experience of those attending Fullerton College. The College proposed to implement the Facilities Master Plan to more effectively meet the space needs of the projected on-campus enrollment through the next decade and beyond, while constructing and renovating facilities to meet the District's instructional needs. Ms. Murray co-authored and oversaw the cultural resources study. All buildings and structures on campus over 45 years old and/or or proposed for demolition/substantial alteration as part of the proposed project were photographed, researched, and evaluated in consideration of NRHP, CRHR, and local designation criteria and integrity requirements, and in consideration of potential impacts to historical resources under CEQA. As a result of the significance evaluation, three historic districts and one individually eligible building were identified within the project area. The study also entailed conducting extensive archival and building development research, a records search, Native American coordination, detailed impacts assessment, and development of mitigation measures for project conformance with the Secretary of the Interior's Standards for Rehabilitation.

MiraCosta Community College District Oceanside Campus, San Diego County, California (2017). Dudek was retained by the MiraCosta Community College District (MCCCD) to conduct a cultural resources study for the proposed Oceanside Campus Facilities Master Plan. Of the original 11 buildings constructed in the early 1960s, nine are still extant and required evaluation for historical significance. The campus was ultimately found ineligible for designation due to a lack of important historical associations and integrity issues. Ms. Murray provided QA/QC of the final cultural report.

Elkus Ranch Master Plan, University of California, Davis, San Mateo County, California (2017) The University of California (UC) Agriculture and Natural Resources (ANR) division retained Dudek to complete a historic resources evaluation as one component of environmental compliance for a Master Plan for the UC Elkus Ranch in San Mateo County, California. The study involved completion of a CHRIS records search, a pedestrian survey of the project area for historic built-environment resources, and recordation and evaluation of four resources for historical significance. The significance evaluations included conducting archival and building development research for each property; outreach with local libraries, historical societies, and advocacy groups; and completion of a historic context. As a result of the Elkus Ranch significance evaluation, all four buildings appear not eligible for inclusion in the NRHP, CRHR, or CHL (6Z) due to a lack of significant historical associations and compromised integrity. Elkus Ranch is not considered a historic resource for the purposes of PRC Section 5024.5.

CSU Chico Siskiyou Hall Project, Chico, Butte County, California (2017). Dudek was retained by CSU Chico for a project that would involve demolition of the existing Siskiyou Hall building to make room for the development of a new science building on the site, located at 400 West 1st Street in Chico, California. A cultural resources technical report was prepared to evaluate the built environment resources located on the parcel for the NRHP, CRHR, and California Historical Landmarks (CHL) to satisfy requirements of CEQA and California Public Resources Code 5024 and 5024.5 for state-owned properties. The building was ultimately found to be ineligible under all designation criteria.

CSU Chico College Park Demolition Project, Chico, Butte County, California (2017). Dudek was retained by California State University (CSU), Chico to complete a cultural resources study for a project that proposes demolition of 10 single-family residences near the CSU Chico campus in the City of Chico, Butte County, California. The study involved completion of a California Historical Information System (CHRIS) records search, outreach with the Native American Heritage Commission (NAHC) and local tribes/groups, a pedestrian survey of the project area for built-environment resources, and recordation and evaluation of 10 properties for historical significance. The significance evaluations included conducting archival and building development research for each property; outreach with local libraries, historical societies, and advocacy groups; and completion of a historic context. This study was conducted in accordance with Section 15064.5(a)(2)-(3) of the CEQA Guidelines, and the project site was evaluated in consideration of CRHR and City of Chico Historic Resources Inventory eligibility and integrity requirements. Furthermore, as required under California Public Resources Code (PRC) Sections 5024 and 5024.5, CSU Chico is required to provide notification and submit documentation to the State Historic Preservation Officer (SHPO) for any project having the potential to affect state-owned historical resources on or eligible for inclusion in the Master List. In accordance with PRC Section 5024(a), all properties were also evaluated in consideration of the NRHP and California Historical Landmark (CHL) criteria and integrity requirements. All 10 properties evaluated for historical significance appear to be not eligible for inclusion in the NRHP, CRHR, CHL, or local register (6Z) due to a lack of significant historical associations and compromised integrity.

SDSU Tula Pavilion and Tenochca Hall Renewal/Refresh, San Diego, California (2017). Dudek was retained by the San Diego State University (SDSU) to evaluate potential impacts to historical resources associated with the proposed Tula Pavilion and Tenochca Hall Renewal/Refresh project located in San Diego, California. The historic resources technical memorandum provides the results of that evaluation. Ms. Murray provided quality assurance/quality control of the final work product and provided input on impacts to historical resources.

Kings Beach Elementary School Modernization Project, Tahoe Truckee Unified School District, Tahoe City, Placer County, California (2016). Ms. Murray served as architectural historian and co-author of the cultural resources study. The study involved evaluation of the existing school for NRHP, CRHR and local eligibility, conducting archival and building development research, a records search, and Native American coordination.

Truckee High School Trach and Field Improvements Project, Tahoe Truckee Unified School District, Town of Truckee, Nevada County, California (2016). Dudek was retained by the Tahoe Truckee Unified School District (the District) to prepare a cultural resources study for the Truckee High School Track and Field Improvements. Ms. Murray provided QA/QC of the evaluation of several buildings within the high school and co-authored the cultural resources report.

Cypress College Facilities Master Plan Program EIR, City of Cypress, Orange County, California (2016). The North Orange County Community College District (NOCCCD) is undertaking a comprehensive improvement and building program to make upgrades and repairs to existing buildings, as well as to construct new facilities to improve the safety and education experience of those attending Cypress College. The College proposed to implement the Facilities Master Plan to more effectively meet the space needs of the projected on-campus enrollment through the next decade and beyond, while constructing and renovating facilities to meet the District's instructional needs. Ms. Murray authored the cultural resources study for the project, which included a significance evaluation of all 1960s and 1970s buildings on campus proposed for demolition or renovation. As a result of the significance evaluation, including consideration of CRHR evaluation criteria and integrity requirements, the original 1960s–1970s campus appears to be eligible as a historic district under CRHR Criterion 3 for conveying a concentration of planned buildings, structures, and associated elements united aesthetically by their embodiment of the Brutalist style. The study also entailed conducting extensive archival and building development research, a records search, Native American coordination, detailed impacts assessment, and development of mitigation measures for project conformance with the Secretary of the Interior's Standards for Rehabilitation.

Schouten House Property Evaluation, California State University, Chico Research Foundation, Butte County, California (2016). Ms. Murray prepared a historic resource evaluation report and DPR form for a former single-family residence located at 2979 Hegan Lane in Butte County, California, in consideration of CRHR and local level eligibility criteria and integrity requirements. The University Research Foundation was proposing demolition of the property.

Tahoe Lake Elementary School Facilities Master Plan Project, Tahoe Truckee Unified School District, Tahoe City, Placer County, California (2015). Ms. Murray served as architectural historian and lead author of the cultural resources study. She recorded and evaluated the Tahoe Lake Elementary School Building for NRHP, CRHR, and local level criteria and integrity considerations. The study also entailed conducting archival and building development research, a records search, and Native American coordination.

San Diego State University (SDSU) Open Air Theater Renovation Project, SDSU and Gatzke Dillon & Balance, LLP, San Diego, California (2015). Ms. Murray served as architectural historian and prepared a technical memorandum that analyzed the project's potential to impact the OAT theater (a contributing property to the San Diego State College

NRHP Historic District). This included conducting a site visit, reviewing proposed site and design plans, and preparing a memorandum analyzing the project's conformance with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

Mt. San Jacinto College (MSJC) Master Plan Project, City of San Jacinto, Riverside County, California (2015). Ms. Murray served as architectural historian, archaeologist, and lead author of the cultural resources study. As part of the study she evaluated 11 buildings for NRHP, CRHR, and local level criteria and integrity requirements. The buildings were constructed prior to 1970 and proposed for demolition as part of the project. The study also entailed conducting extensive archival and building development research at District offices, a records search, and Native American coordination.

San Diego State University (SDSU) Engineering and Sciences Facilities Project, SDSU and Gatzke Dillon & Balance, LLP, San Diego, California (2014). Ms. Murray served architectural historian, archaeologist, and lead author of the Cultural Resources Technical Report for the SDSU Engineering and Interdisciplinary Sciences Building Project. The project required evaluation of 5 historic-age buildings in consideration of NRHP, CRHR, and local designation criteria and integrity requirements, an intensive level survey, Native American coordination, and a records search. The project proposes to demolish four buildings and alter a fifth as part of the university's plan to update its engineering and science facilities.

Big Chico Creek Ecological Reserve (BCCER) Henning Property Historical Evaluation, California State University, Chico, Butte County, California (2014). Ms. Murray authored the historical significance evaluation report for a property located at 3521 14 Mile House Road as requested by the California State University Chico Research Foundation. The property is historically known as the Henning Property and has served as the BCCER conference center in recent years. The Foundation is considering demolition of the existing property due to numerous safety concerns and the high cost associated with bringing the building up to current code requirements.

The Cove: 5th Avenue Chula Vista Project, E2 ManageTech Inc., City of Chula Vista, San Diego County, California (2014). Ms. Murray served as architectural historian and co-author of the CEQA report. The project involved recordation and evaluation of several properties functioning as part of the Sweetwater Union High School District administration facility, proposed for redevelopment, as well as an archaeological survey of the project area.

State of California

Judicial Council of California Historical Resource Evaluation Report for the Stanley Mosk Courthouse, City of Los Angeles, Los Angeles County, California (2019). Dudek was retained by the Judicial Council of California (JCC) to prepare an evaluation of the Stanley Mosk Courthouse building, located at 111 N. Hill Street in the City of Los Angeles, California. To comply with Public Resources Code Section 5024(b), the JCC must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under the JCC's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or registered or that may be eligible for registration as a California Historical Landmark (CHL). Extensive research indicates that the building meets NRHP Criteria A and C; CRHR Criteria 1 and 3; the "important events" and "architecture" criteria for CHL; the "important to Los Angeles history" and "architecture" criteria for Los Angeles HCM; and Criteria 1, 2, and 3 for Los Angeles HPOZ for listing in any of these registration programs. Therefore, the Stanley Mosk Courthouse appears to be a historic resource for the purposes of California Public Resources Code 5024 and 5024.5. Ms. Murray managed the project and provided QA/QC of the final report.

Judicial Council of California Historical Resource Evaluation Report for the Santa Monica Courthouse, City of Santa Monica, Los Angeles County, California (2017). Dudek was retained by the Judicial Council of California (JCC) to prepare an evaluation of the Santa Monica Courthouse building, located at 1725 Main Street in the City of Santa Monica, California. To comply with Public Resources Code Section 5024(b), the JCC must submit to the

State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under the JCC's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or registered or that may be eligible for registration as a California Historical Landmark (CHL). The Santa Monica Courthouse was found not eligible for designation under all applicable criteria. Ms. Murray co-authored the report and provided QA/QC of the final cultural resources report.

Department of General Services Historical Resource Evaluation for the Pomona Armory at 600 South Park Avenue, City of Pomona, Los Angeles County, California (2017). Dudek was retained by the State of California Department of General Services to mitigate potential adverse effects to the Pomona Armory (600 South Park Avenue), a state-owned historical resource proposed to be transferred from State-ownership to a local agency or private owner. Ms. Murray prepared a detailed significance evaluation for the Pomona Park Armory in the consideration NRHP, CRHR, CHL, and City of Pomona designation criteria and integrity requirements, and prepared a single historic landmark application for the property. The Pomona Park Armory was locally designated after unanimous approval by the Historic Resources Commission and City Council. SHPO concurred with the evaluation findings and agreed that adverse effects had been adequately mitigated with no comments.

Presentations

***Historical Resources under CEQA*. Prepared for the Orange County Historic Preservation Planner Working Group. Presented by Samantha Murray, Dudek. December 1, 2016.** Ms. Murray delivered a one-hour PowerPoint presentation to the Orange County Historic Preservation Planner Working Group, which included planners from different municipalities in Orange County, regarding the treatment of historical resources under CEQA. Topics of discussion included identification of historical resources, assessing impacts, avoiding or mitigating impacts, overcoming the challenges associated with impacts to historical resources, and developing effective preservation alternatives.

***Knowing What You're Asking For: Evaluation of Historic Resources*. Prepared for Lorman Education Services. Presented by Samantha Murray and Stephanie Standerfer, Dudek. September 19, 2014.** Ms. Murray and Ms. Standerfer delivered a one-hour PowerPoint presentation to paying workshop attendees from various cities and counties in Southern California. The workshop focused on outlining the basics of historical resources under CEQA, and delved into issues/challenges frequently encountered on preservation projects.

Sarah Corder, MFA

Senior Architectural Historian

Sarah Corder is an architectural historian with more than 13 years of professional experience throughout the United States in all elements of cultural resources management, including project management, intensive-level field investigations, architectural history studies, and historical significance evaluations in consideration of the California Register of Historical Resources (CRHR) Register, and the National Register of Historic Places (NRHP), and local-level evaluation criteria. Ms. Corder has conducted numerous historical resource evaluations and developed detailed historic context statements for a multitude of property types and architectural styles, including private residential, commercial, industrial, educational, and agricultural properties. She has also provided expertise on numerous projects requiring conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Education

Savannah College of Art and Design
MFA, Historic Preservation, 2004

Bridgewater College
BA, History, 2002

Professional Affiliations

National Trust for Historic Preservation

Los Angeles Conservancy

California Preservation Foundation

Society for Architectural Historians

Ms. Corder meets the Secretary of the Interior's Professional Qualification Standards for both Architectural History and History. She has experience preparing environmental compliance documentation in support of projects that fall under the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA).

Dudek Project Experience (2017-Present)

Education

CSU Chico Master Plan EIR (Ongoing). Dudek was retained to evaluate all buildings and structures on campus over 45 years old that were proposed for demolition or substantial alteration as part of the proposed Master Plan Program. The study entailed conducting archival and building development research, a records search, detailed impacts assessment, and development of mitigation measures for project conformance with the Secretary of the Interior's Standards for Rehabilitation. Ms. Corder is in charge of the campus field survey and archival research tasks for the project, as well as, co-authoring the technical report.

San Francisco State University Master Plan EIR (Ongoing). Dudek was retained to evaluate all buildings and structures on campus over 45 years old that were proposed for demolition or substantial alteration as part of the proposed Master Plan Program. The study entailed conducting archival and building development research, a records search, detailed impacts assessment, and development of mitigation measures for project conformance with the Secretary of the Interior's Standards for Rehabilitation. Ms. Corder is in charge of the campus field survey and archival research tasks for the project, as well as, co-authoring the technical report.

CSU Chico College Park Demolition Project, Butte County, California (2018). Dudek was retained by California State University (CSU), Chico to complete a cultural resources study for a project that proposes demolition of 10 single-family residences near the CSU Chico campus in the City of Chico, Butte County, California. The study involved completion of a California Historical Information System (CHRIS) records search, outreach with the Native American Heritage

Commission (NAHC) and local tribes/groups, a pedestrian survey of the project area for built-environment resources; conducting archival and building development research for each property; outreach with local libraries, historical societies, and advocacy groups; and completion of a historic context and evaluation of 10 properties for historical significance. All 10 properties evaluated for historical significance appear to be not eligible for inclusion in the NRHP, CRHR, CHL, or local register (6Z) due to a lack of significant historical associations and integrity issues.

John Adams Middle School Auditorium Replacement Project, City of Santa Monica, Los Angeles County, California (2018). The Santa Monica-Malibu Unified School District retained Dudek write the Final Mitigated Negative Declaration for the John Adams Middle School Auditorium Replacement Project for the Santa Monica-Malibu Unified School District. The project proposed to demolish the existing auditorium and music building and replace them with a new performing arts center.

Castilleja School Project, City of Palo Alto, Santa Clara County, California (2017). Dudek was retained by the City of Palo Alto to conduct a cultural resources study for the Castilleja Master Plan and Conditional Use Permit project. The study included a historical significance evaluation of the campus and related buildings and structures. Ms. Corder's responsibilities for the project included the following: architectural history field survey, background research, preparation of DPR forms for the evaluation of built resources, and co-authoring the cultural resources report.

CSU Chico Siskiyou Hall Project, Butte County, California (2017). Dudek was retained by California State University (CSU), Chico to complete a historic resources technical report for Siskiyou Hall. The purpose of this technical report is to evaluate the built environment resources located on the parcel for the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and California Historical Landmarks (CHL) to satisfy requirements of the California Environmental Quality Act and California Public Resources Code 5024 and 5024.5 for state-owned properties. Ms. Corder's responsibilities for the project included the following: architectural history field survey and archival research.

Elkus Ranch Master Plan Project, University of California Davis, San Mateo County, California (2017). Dudek was retained by UC Davis to complete a historic resources study for the Master Plan of the University's Elkus Ranch property. This study involved a pedestrian survey of the project area for built-environment resources, and recordation and evaluation of all historic age buildings in consideration of NRHP designation criteria and integrity requirements. Ms. Corder's responsibilities for the project included: architectural history field survey, building permit research, background research, and co-authoring the historic resources report.

Fullerton College Facilities Master Plan Program EIR, North Orange County Community College District, City of Fullerton, Orange County, California (2017). The North Orange County Community College District (NOCCCD) contracted Dudek to evaluate all buildings and structures on campus over 45 years old that were proposed for demolition or substantial alteration as part of the proposed Master Plan Program. The study entailed conducting archival and building development research, a records search, detailed impacts assessment, and development of mitigation measures for project conformance with the Secretary of the Interior's Standards for Rehabilitation. As a result of the significance evaluation, three historic districts and one individually eligible building were identified within the project area.

State of California

Judicial Council of California Historical Resource Evaluation Report for the Santa Monica Courthouse, City of Santa Monica, Los Angeles County, California (2017). Dudek was retained by the Judicial Council of California (JCC) to prepare an evaluation of the Santa Monica Courthouse building, located at 1725 Main Street in the City of Santa Monica, California. To comply with Public Resources Code Section 5024(b), the JCC must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under the JCC's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or registered or that may be eligible for registration as a California Historical Landmark (CHL). The Santa Monica Courthouse was found not eligible for designation under all applicable criteria. Ms. Corder's responsibilities for the project included archival research and co-authoring the cultural resources report.

Judicial Council of California Historical Resource Evaluation Report for the Figueroa Division Courthouse, City of Santa Barbara, Santa Barbara County, California (2017). Dudek was retained by the Judicial Council of California (JCC) to prepare an evaluation of the Santa Monica Courthouse building, located at 118 E. Figueroa Street in the City of Santa Barbara, California. To comply with Public Resources Code Section 5024(b), the JCC must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under the JCC's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or registered or that may be eligible for registration as a California Historical Landmark (CHL). The Figueroa Division Courthouse was found not eligible for designation under all applicable criteria. Ms. Corder's responsibilities for the project included the following: background research and co-authoring of the final cultural resources report.

Department of General Services Historical Resource Evaluation for the Normal Street Department of Motor Vehicles Site at 3960 Normal Street, San Diego, California (2017). Dudek was retained by the State of California Department of General Services to complete a Historical Resources Technical Report for a project that proposes demolition and replacement of the Department of Motor Vehicles (DMV) building located at 3960 Normal Street in the City of San Diego. To comply with Public Resources Code Section 5024(b), DGS must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under DGS's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or that may be eligible for registration as a California Historical Landmark (CHL). The DMV was found not eligible. Ms. Corder's responsibilities for the project included background research for the historical resource technical report.

Development

Carol Kimmelman Sports and Academic Center Project, City of Carson, Los Angeles County, California (2018). Dudek was retained to conduct a cultural resources study on the Victoria County Golf Course and associated recreation buildings for the proposed Kimmelman Sports and Academic Center. For the project, Ms. Corder conducted a record search, a pedestrian survey, archival and building development research, NRHP and CRHR evaluations, and impacts analysis. As a result of the historic significance evaluation, all golf course components associated with the Victoria County Golf Course were found not eligible under designation requirements. The project proposed to redevelop 87 acres of the northeastern portion Victoria Golf Course site for public recreation purposes, including 75,000 sq. ft. recreational buildings, and 22,000 sq. ft. of support buildings.

Birch Specific Plan 32-Unit Condo Project, City of Carson, Los Angeles County, California (2017). Dudek was retained by the City of Carson to prepare a cultural resources report for a project that proposes to demolish approximately 6,200 square feet of existing residential buildings and roughly 5,850 square feet of pavement on the project site, and construct a 32-unit residential condominium community with on-grade parking, landscaping, and other associated improvements. The historical significance evaluation included three residential properties proposed for demolition. All properties were found not eligible under all designation criteria and integrity requirements. Ms. Corder's responsibilities for this project included the following: field survey, building permit research, background research, and co-authoring the final cultural resources report.

Municipal

Gilroy Citywide Historic Resources Inventory and Historic Context Statement, City of Gilroy, Gilroy, California (May 2018 – present, estimated completion date October 2019). Dudek is currently working with the City of Gilroy to prepare a citywide historic context statement and update its 1986 historic resource inventory. As survey lead, Ms. Corder has already successfully completed reconnaissance-level survey of over 3,400 properties on time and within budget, submitted a draft historic context statement to the city, and has hosted a public kick-off meeting/outreach session that was well received by the community. Dudek has developed highly detailed and efficient iPad field forms that allow surveyors to record a property in less than 5 minutes and provide the City with real-time survey data.

San Diego Dam and Reservoir Citywide Inventory, City of San Diego Public Utilities Department, San Diego, California (January 2017 – present, estimated completion date March 2019). Dudek is currently in the process of preparing a historic context statement and significance evaluation of all dam infrastructure owned by the City's Public Utilities Department. The project involves evaluation of at least 10 dam complexes for historical significance in consideration of NRHP, CRHR, and City designation criteria and integrity requirements. While the project is still in progress, Ms. Corder has contributed extensively to archival research and has authored individual historic resource reports for Lower Otay Dam and El Capitan Dam.

The Santa Monica City Yards Master Plan Project, City of Santa Monica, Los Angeles County, California (2017). The City of Santa Monica retained Dudek to complete a cultural resources study for the proposed City Yards Master Plan project site located at 2500 Michigan Avenue in the City of Santa Monica. The study involved evaluation of the entire City Yards site, including two murals and a set of concrete carvings for historical significance and integrity. As a result, the City Yards and its associated public art work was found ineligible under all designation criteria. Ms. Corder conducted building permit research and co-authored the technical report.

LADWP West Los Angeles District Yard Project, City of Los Angeles, Los Angeles County, California (2017). Dudek was retained by Los Angeles Department of Water and Power (LADWP) to complete a cultural resources study for a project that proposes demolition of five LADWP-owned administrative buildings and warehouses at the West Los Angeles District Headquarters located at 12300 West Nebraska Avenue. Dudek evaluated the yard for historical significance in consideration of NRHP, CRHR, and City of Los Angeles HCM criteria and integrity requirements. Ms. Corder's responsibilities for the project included the following: architectural history field survey and background research.

Transportation

Princeton Avenue Road Widening Project, City of Moorpark, Ventura County, California (2017). Dudek was retained by Stantec and the City of Moorpark to prepare Caltrans-compliant cultural resource documentation for the Princeton Avenue Road Widening Project. The project includes approximately 0.75-miles of roadway widening and improvements, including sidewalks and bicycle lanes. Dudek prepared an ASR, HRER, and HPSR in support of this effort. Both properties were found ineligible under all designation criteria and integrity requirements. The reports are currently pending Caltrans District 7 approval. Ms. Corder's responsibilities for the project included background research for the required reports.

Historical Resources Assessment for the SFO Residential Sound Insulation Program, Cities of San Bruno and Millbrae, San Mateo County, California (2017). Dudek was retained by San Francisco International Airport (SFO) to evaluate 28 residential properties constructed 50 years ago or more within the cities of San Bruno and Millbrae, in San Mateo County, California. These properties are proposed to receive installation of sound insulation materials as part of SFO's Residential Sound Insulation Program. All 28 properties were recorded and evaluated on State of California Department of Parks and Recreation Series 523 Forms for historical significance in consideration of National Register of Historic Places (NRHP) designation criteria and integrity requirements. Ms. Corder's responsibilities for the project included the following: architectural history field survey, background research, preparation of DPR forms for the evaluation of built resources, and co-authoring the cultural resources report.

Kate Kaiser, MSHP

Architectural Historian

Kate Kaiser is an architectural historian with 7 years' professional experience as a cultural resource manager specializing in California Environmental Quality Act (CEQA) compliance, National Historic Preservation Act Section 106 compliance, reconnaissance and intensive level surveys, archival research, cultural landscapes, and GIS. Ms. Kaiser meets the Secretary of the Interior's Professional Qualification Standards for both architectural history and archaeology.

In addition, Ms. Kaiser has worked as an archaeological technician for the National Park Service and USDA Forest Service. She has worked with federal, private, and local organizations to manage multidisciplinary transportation projects, park-wide inventories, and federal land management projects.

Education

University of Oregon
MS, Historic Preservation, 2017

Boston University
BA, Archaeology, 2009

Professional Affiliations

Association for Preservation Technology – Southwest

California Preservation Foundation

Vernacular Architecture Forum

Dudek Project Experience (2017-present)

Development

Cultural Resources Technical Report for the City of Irwindale Speculative Concrete Tilt-Up Building Project. Irwindale, Los Angeles County, California. 2019. Kaiser served as architectural historian and author of the cultural resources technical report for the City of Irwindale Speculative Concrete Tilt-Up Building Project. The report included conducting a CHRIS record search, reviewing permits held by the City of Irwindale, archival research, historical context development, developing building and structure descriptions, and historical significance evaluations for two buildings and thirteen structures at a hollow-core concrete panel manufacturer in southeast Irwindale. The project proposed to demolish all buildings and structures in the project site and construct a 528 710 s.f., tilt-up concrete wareshouse on the parcel. Resources were determined to not meet the age threshold for listing in the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), or as a City of Irwindale Historic Resource.

Etiwanda Heights Neighborhood and Conservation Plan. Rancho Cucamonga, San Bernardino County, California. 2018. Kaiser served as architectural historian and co-author of the cultural resources technical report for the Etiwanda Heights Neighborhood and Conservation Plan (EHNCP). Ms. Kaiser's report included conducting a record search, coordinating with the San Bernarino County Department of Public Works, developing the structure descriptions, archival research, historical context development, and historical significance evaluations. The project proposed to annex the project area from San Bernardino County into the City of Rancho Cucamonga, and develop the Neighborhood Priority Area into a residential subdivision, and the Conservation Priority Area into a natural resource conservation area. Resources were determined to not meet the age threshold for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR).

Historical Resource Assessment for 1230 North Ogden Drive, City of West Hollywood, Los Angeles County, California. 2018. Ms Kaiser served as architectural historian and author of the historic resource assessment for four residential buildings on the 1230 North Ogden Drive parcel in West Hollywood. Ms. Kaiser's report included conducting a record search, coordinating with the City of West Hollywood for building permits, developing the building description, archival research, historical context development, historical significance evaluations, and California DPR form production for the four buildings. The historical resource assessment report fulfills City requirements during the development permit application process. All four buildings were determined inelgibile for listing in the NRHP or CRHR.

Oakmont/Tamarind Warehouse Project. City of Rialto, San Bernardino County, California. 2018. Ms. Kaiser served as architectural historian and co-author of the Cultural Resources Report for the Oakmont/Tamarind Warehouse Project. Ms. Kaiser contributed reconnaissance level fieldwork and aerial photograph descriptions for the report. The project proposed to construct a 156,500 sq. ft., one story warehouse on six adjoiing parcels on approximately 8 acres.

Stickleback Movie Ranch Historical Resource Evaluation, Los Angeles County, California. 2018. Ms. Kaiser served as architectural historian and author of the cultural resources report in support of a larger mitigated negative declaration document. Contributed on-site fieldwork, building development descriptions, archival research, historical context development, and historical significance evaluations for five extant ranch buildings and several other wildfire-damaged resources. The project proposed to demolish six fire-affected buildings and structures for an ongoing Metropolitan Water District project.

Education

John Adams Middle School Auditorium Replacement Project, City of Santa Monica, Los Angeles County, California 2018. Ms. Kaiser served as architectural historian and co-author of the historical resource evaluation report and contributed resource descriptions and alterations sections. The Santa Monica-Malibu Unified School District retained Dudek write the Final Mitigated Negative Declaration for the John Adams Middle School Auditorium Replacement Project for the Santa Monica-Malibu Unified School District. The project proposed to demolish the existing auditorium and music building and replace them with a new performing arts center.

Healthcare

Kaiser Permanente Los Angeles Specialty Medical Center Project, Los Angeles, Los Angeles County, California. 2019. Ms. Kaiser served as architectural historian and author of the Historical Resource Assessment for the Kaiser Permanente Los ANgeles Specialty Medical Center at 755-765 W. College Street in Los Angeles. Preparation of the report involved extensive archival research, reconnaissance level fieldwork, historic context development, building development descriptions, historical significance evaluations for buildings greater than 45-years in age, and DPR forms for the medical center bvuildings and structures that are proposed for demolition as part of the multi-phase project. As a result of the evaluations, all buildings were found not eligible for designation under all applicable national, state, and local designation criteria and integrity requirements.

Kaiser Permanente Los Angeles Medical Center Project, Los Angeles, Los Angeles County, California. 2018. Ms. Kaiser served as architectural historian and co-author of the Draft EIR Cultural Resources Chapter and the author of the Cultural Resources Report Appendix. Preparation of the report involved extensive archival research, reconnaissance level fieldwork, historic context development, building development descriptions, historical significance evaluations, and DPR forms for six buildings greater than 45-years in age that are proposed for demolition as part of the multi-phase project. As a result of the evaluations, all buildings proposed for demolition were found not eligible for designation under all applicable national, state, and local designation criteria and integrity requirements. Ms. Kaiser's DEIR chapter also analyzed potential indirect impacts on two other National Register listed or eligible sites: the Aline Barnsdall Complex and the Hollywood Presbyterian Medical Center.

Municipal

LADWP Valley Generating Station Project, Los Angeles Department of Water and Power, California. 2019 (ongoing). Ms. Kaiser served as architectural historian and author of the Cultural Resources Technical Report for the Valley Generating Station Project. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The project proposed to remove the 1953 steam generating plant, as well as the four stacks, SPRR rail spur, and underground fuel tanks.

LACSD Gardena Pumping Station Project, Sanitaiton Districts of Los Angeles County, Gardena, California. 2019. Ms. Kaiser served as architectural historian and author of the Cultural Resources Technical Report for the Gardena Pumping Project. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The project proposed to remove the 1929 and 1960 pumping plant above and below-ground structures, and two adjacent parcels containing commercial buildings (1954, 1957) and replace them with a larger capacity pumping plant facility.

Phillips 66 & Kinder Morgan Relocation Project, Berths 150-151, Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS), Port of Los Angeles, California. 2019. Ms. Kaiser served as architectural historian and co-author of the Updated Historical Resources Evaluation Report for the Phillips 66 & Kinder Morgan Relocation Project. Preparation of the report involved reviewing previous evaluations for Union Oil Terminal Berths 150-151 and writing an updated significance evaluation. The project proposed to remove and replace the original wharfs with new concrete loading platform, mooring and breasting dolphins, access ramps, catwalks, and an underwater bulkhead. It also proposed the construction of new topside and piping components connecting the new platform to existing pipes in the backlands.

Gilroy City-wide Historic Resource Inventory, City of Gilroy, Santa Clara County, California. 2018 – ongoing. Ms. Kaiser served as architectural historian and co-author for the City-wide historic context statement prepared for the City of Gilroy. Preparation of the historical context statement involved extensive archival research, coordination with the City of Gilroy and archival repositories, chronological period and theme identification, and developing the historical narrative for the City.

Globemaster Corridor Specific Plan, City of Long Beach, Los Angeles County, California. 2018. Ms. Kaiser served as architectural historian and author of the Draft EIR-EIS Cultural Resources Chapter for the Globemaster Corridor Specific Plan (GCSP) project. The project proposed to implement the GCSP, a planning and regulartory framework for redevelopment of an area adjacent to the Long Beach Airport and the surrounding residential and business community which includes rezoning portions of the GCSP area, and a mobility plan that implements new streets and pedestrian connectors. Since the GCSP does not directly propose changes to the buildings or structures in the Plan area, the cultural resources report takes a programmatic overview and offers potential impacts analysis and mitigation measures for future development.

Historic Context Statement for Reservoirs, City of San Diego Public Utilities Department, California. 2018 – ongoing. Ms. Kaiser served as architectural historian and author of the historic context statement, as well as individual historic resource reports for the Barrett Dam and reservoir, Lower Otay Dam and reservoir, and Hodges Dam and reservoir. Dudek is also preparing detailed impacts assessments for proposed modification to dams, as required by DSOD. The project involves evaluation of at least 10 dams for historical significance in consideration of NRHP, CRHR, and City designation criteria and integrity requirements, and requires extensive archival research and pedestrian survey. Upon completion of the project, the City will have a streamlined document for the management of their historic dam and reservoir infrastructure.

LADWP De Soto Tanks Project, Los Angeles Department of Water and Power, California. 2018. Ms. Kaiser served as architectural historian and author of the Historic Properties Identification Report for the De Soto Tanks EIR. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The project proposed to remove the 1941 reservoir and associated buildings, and replace them with two modern underground storage tanks, as well as connections to the LADWP Rinaldi Trunk Line and De Soto Trunk Line.

LADWP Tujunga Spreading Grounds Enhancement, Los Angeles Department of Water and Power, California. 2018. Ms. Kaiser served as architectural historian and author of the cultural resources report CEQA-Plus Project. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The evaluation found the property ineligible under all NRHP, CRHR, and Los Angeles Historic-Cultural Monuments designation criteria. The project proposed to modify a U.S. Army Corps of Engineer-owned flood control channel to divert more flood water from the Tujunga Flood Control Channel into the Tujunga Spreading Grounds.

LADWP West Los Angeles District Yard Project, Los Angeles Department of Water and Power, California. 2017. Ms. Kaiser served as architectural historian and author of the cultural resources report. Preparation of the report involved extensive archival research, in-field research, historic context development, building development descriptions, historical significance evaluations, and DPR forms for each building of the project. The evaluation found the property ineligible under all National Register of Historic Places, California Register of Historic Resources, and Los Angeles Historic-Cultural Monuments designation criteria. The project proposed to demolish existing buildings and build new buildings and an underground parking structure.

Santa Monica City Yards Master Plan Project, City of Santa Monica, Los Angeles County, California. 2017. Ms. Kaiser served as architectural historian and co-author of the historical resource evaluation report. Preparation of the report involved extensive archival research, in-field research, historic context development, building development descriptions, historical significance evaluations, and DPR forms for each building of the project. The City of Santa Monica retained Dudek to complete a cultural resources study for the proposed City Yards Master Plan project site located at 2500 Michigan Avenue in the City of Santa Monica.

State of California

Judicial Council of California Historical Resource Evaluation Report for the Stanley Mosk Courthouse, City of Los Angeles, Los Angeles County, California. 2019. Ms. Kaiser served as architectural historian and author of the historical resource evaluation report. Preparation of the report involved extensive archival research, interior and exterior survey fieldwork, historic context development, material descriptions, historical significance evaluations, and DPR forms for the Stanley Mosk Courthouse. Dudek was retained by the Judicial Council of California (JCC) to prepare an evaluation of the Stanley Mosk Los Angeles County Courthouse building, located at 111 N. Hill Street in the City of Los Angeles, California. To comply with Public Resources Code Section 5024(b), the JCC must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under the JCC's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or registered or that may be eligible for registration as a California Historical Landmark (CHL). The Stanley Mosk Courthouse was found eligible for designation for the NRHP, CHL, CRHR, and Los Angeles Historic Cultural Monument list under Criterion A/1 and C/3.

APPENDIX B

CONFIDENTIAL Record Search Results

This appendix is on file with California State University, Long Beach and is not publicly available, as it provides confidential information about Native American sites, archaeological sites, and/or other historical resources.

APPENDIX C

DPR Form for the Housing and Residential Life Building

State of California – The Resources Agency
DEPARTMENT OF PARKS AND RECREATION
PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Page 1 of 7 ***Resource Name or #:** (Assigned by recorder) Housing and Residential Life Office
P1. Other Identifier:
***P2. Location:** ☐ **Not for Publication** ■ **Unrestricted**
***a. County** Los Angeles **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)
***b. USGS 7.5' Quad** Los Alamitos **Date** 1981 **T** 04S ; **R** 12W ; **Sec** 27 ; San Bernardino **B.M.**
c. Address 1250 Bellflower Boulevard, MS 8701 City Long Beach Zip 90815
d. UTM: (Give more than one for large and/or linear resources) Zone 11S , 396374.9 mE/ 3739208.8 mN
e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
Elevation: 18 feet amsl; Decimal Degrees: 33.787947°, -118.118578°; The Housing and Residential Life (HRL) Office is bounded by East Atherton Street to the north; Earl Warren Drive and the on-campus Associated Students Inc. (ASI) Recycling Center to the east; a paved unnamed internal campus access road, and on-campus residence halls and outdoor commons in the Parkside College student residences to the south; and an on-campus daycare facility, the Isabel Patterson Child Development Center, to the (See Continuation Sheet)

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The HRL building is one story, designed in in 1987 in the Contemporary Style by KSLW. As previously discussed, it is located in the northwestern portion of the CSULB campus, immediately north of the Parkside College student residential community and immediately east of the Isabel Patterson Child Development Center. The HRL building is an irregular L-shaped in plan, and features a hipped, standing-seam, (See Continuation Sheet)

***P3b. Resource Attributes:** (List attributes and codes) HP15. Education Building
***P4. Resources Present:** ■ Building ☐ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other (Isolates, etc.)

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) Housing and Residential Life Office, looking northeast (IMG_3490)

***P6. Date Constructed/Age and Source:** ☐ Historic ☐ Prehistoric ☐ Both
1989; KSLW 1987

***P7. Owner and Address:**
CSU Long Beach
1250 Bellflower Boulevard
Long Beach, CA 90840

***P8. Recorded by:** (Name, affiliation, and address) Kate Kaiser, Dudek
38 N Marengo Ave
Pasadena, CA 91101

***P9. Date Recorded:** 6/4/2019

***P10. Survey Type:** pedestrian

***P11. Report Citation:** (Cite survey report and other sources, or enter "none.")
Dudek. 2019. “Historical Resource Evaluation Report for Hillside office, California State University Long Beach.” Prepared for California State University Long Beach.

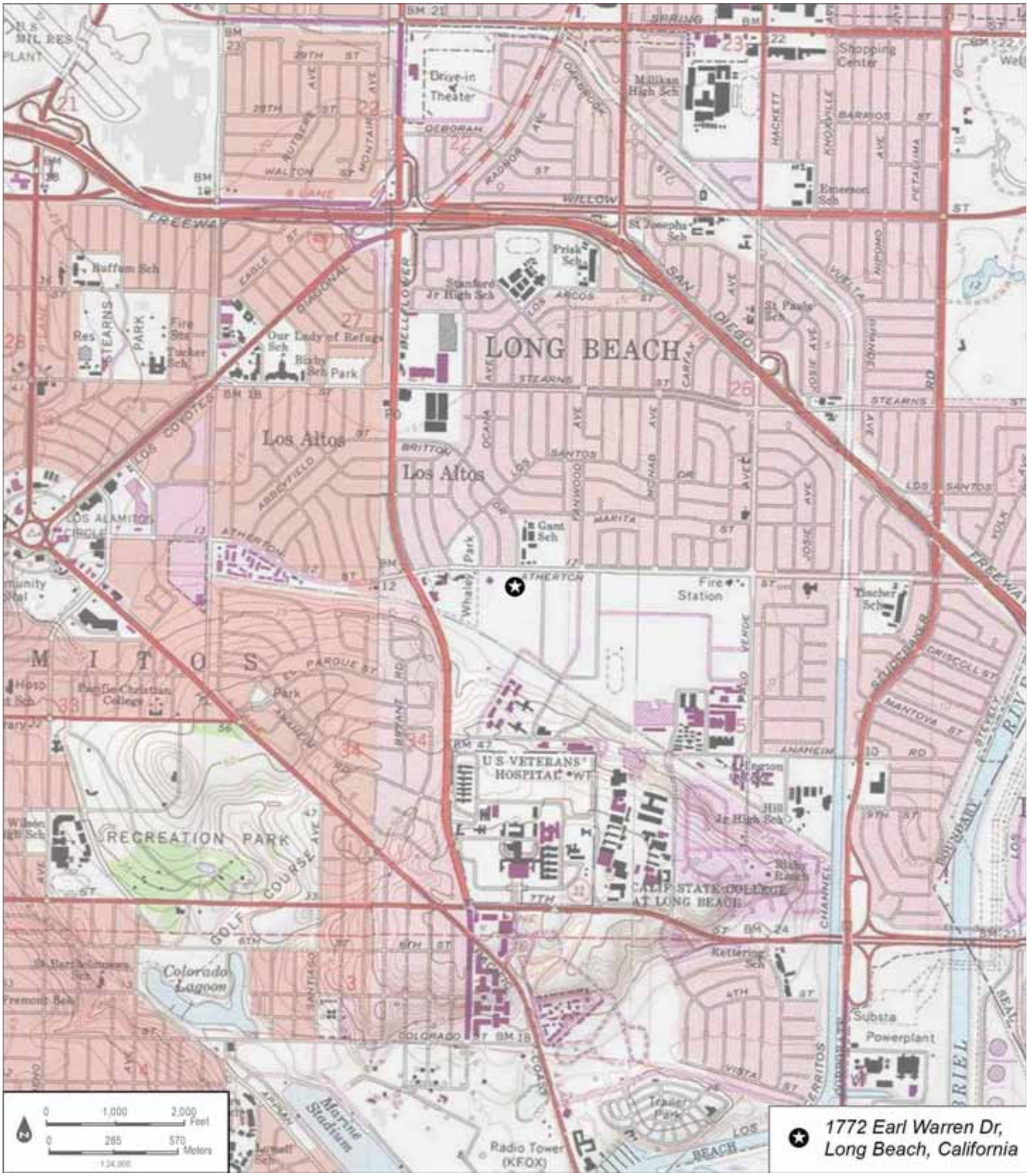
***Attachments:** ☐NONE ■Location Map ■Continuation Sheet ■Building, Structure, and Object Record ☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record ☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California ♁ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 **of** 7 ***Resource Name or #** (Assigned by recorder) Housing and Residential Life Office
***Map Name:** Los Alamitos, Calif. ***Scale:** 1:24,000 ***Date of map:** 1981



BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) Housing and Residential Life Office ***NRHP Status Code** 6Z

B1. Historic Name: Housing and Residential Life Office
B2. Common Name: Housing and Residential Life Office
B3. Original Use: Administrative Office B4. Present Use: Administrative Office
***B5. Architectural Style:** Contemporary
***B6. Construction History:** (Construction date, alterations, and date of alterations)

The Housing and Residential Life Office building was designed by Killingsworth, Stricker, Lindgren, Wilson & Associates, Inc. (KSLW) in 1987 (KSLW 1987). Construction began in 1988 and was completed by 1989. The following alterations and updates were identified through research conducted of the University’s building development files on May 14, 2019.

- Addition (north side), c. 1991

***B7. Moved?** ☐**No** ☐**Yes** ☐**Unknown** **Date:** **Original Location:**
***B8. Related Features:**

Isabel Patterson Child Development Center
Parkside College residence hall complex
Recycling Center

B9a. Architect: Killingsworth, Stricker, Lindgren, Wilson & Associates, Inc.
b. Builder: CSU Long Beach Physical Plant
***B10. Significance: Theme** **Area**
Period of Significance **Property Type** **Applicable Criteria**
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)

(See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes)

***B12. References:**

(See Continuation Sheet)

B13. Remarks:

***B14. Evaluator:** Kate Kaiser, MSHP, Dudek
***Date of Evaluation:** 6/19/2019

(This space reserved for official comments.)

(Sketch Map with north arrow required.)

P2e. Other Locational Data (Continued): west. An off-campus residential neighborhood is located north of the project site across East Atherton Street.

P3a. Description (Continued):
metal-clad roof with a wide overhang and closed eave. Exterior wall cladding consists of textured cement plaster, with smooth-painted wood trim around fenestration and under the soffit. Fenestration units consist of a single and paired fixed glass window with a bronze-colored solar tint over a two-light, aluminum, sliding window with a bronze-colored solar tint; and single fixed glass windows with bronze tint. Several windows projected from the wall plane on the east and west elevations, the remainder were flush. Doors consist of a single pair of metal-framed glass doors on the west (main) elevation. The building has an addition on the north side, designed in 1989 and constructed in 1990, with cladding, roofing, and fenestration that are indistinguishable from those of the original building. The northern and eastern perimeters of the project site are lined with trees and shrubs, consisting of (but not limited to):

- 8 Brisbane box (*Lophostemon confertus)*
- 3 Canary Island pine (*Pinus canariensis*)
- 5 carrot wood (*Cupaniopsis anacardioides*)
- 1 evergreen pear (*Pyrus kawakamii*)
- 1 glossy privet (*Ligustrum lucidum*)
- 10 lemon-scented gum (*Corymbia citriodora*)
- 3 pink melaleuca (*Melaleuca nesophila*)
- 2 red ironbark (*Eucalyptus sideroxylon*)

The trees on the northern side are set back from East Atherton Street and were planted mostly along an existing fence line. Turf lawn exists between the fence line and East Atherton Street.

Alterations
The following alterations were identified through review of property record research and/or during the pedestrian survey conducted on June 4, 2019:

- Addition to north elevation, KSLW 1989
- Add volleyball playing court, CSULB Physical planning, 1995
- Add raised bed garden, circa 2014

Character Defining Features

- Textured-finish cement plaster cladding
- Hipped, low-pitched metal roof
- Wide overhanging eaves
- Large, tinted, fixed windows and smooth wood surrounds
- Integrated landscaped elements such as planted walks and a tree screen

B10. Significance (Continued):

One potential historical resource was identified within the project site as a result of the survey: the HRL building. The following provides an evaluation of the HRL building located on the CSULB campus in consideration of NRHP, CRHR, City of Long Beach, and CHL designation criteria and integrity requirements.

NRHP/CRHR/City Statement of Significance

Criterion A/1/A: That are associated with events that have made a significant contribution *to the broad patterns of our history.*

Archival research did not find any association with events that have made significant contributions to the broad patterns of local or regional history. Research indicates that the HRL building was completed in 1989 and is the most recent component of the on-campus housing residence halls and support buildings, built after the multiphase residence hall development program, which constructed the Hillside College and Parkside College student housing. The building was not constructed during any notable periods of increased development, such as the late 1970s, which saw the construction of a handful of classroom buildings, faculty offices, facilities management buildings, and science laboratories as a result of state funding increases. The building is not specifically called for in any applications for funding to the State of California, and was notably excluded from the 1987 allocation of $12.5 million in funding from the State of California, which was used for the School of Business building, a Parking Structure, the International House residence hall, the North Campus Library, the art museum, a parking lot, School of Engineering additions, Fine Arts auditorium, and dance facility (IPT 1987).

While not included in the original 1963 KBA Campus Master Plan document, the HRL building was needed to support the growing residence hall program and required more administrative oversight. Although the property is part of a trend of overall growth, there is no indication that the construction of this building marked a pivotal point in the history of CSULB. Additionally, it is not known to be directly associated with events that have made a significant contribution to the history of the nation, state, or city. Therefore, the property does not appear eligible under NRHP/CRHR/City Criterion A/1/A.

Criterion B/2/B: That are associated with the lives of persons significant in our past.

Archival research did not indicate that the building has any direct association with people who are known to be historic figures at the national, state, or local level. As such, this property is not known to have any historical associations with people important to the nation’s or state’s past. Due to a lack of identified significant associations with important persons in history, the HRL building does not appear eligible under NRHP/CRHR Criterion B/2/B.

Criterion C/3/C: That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

The HRL building is an unremarkable Contemporary Style small-scale office building designed by Killingsworth, Stricker, Lindgren, Wilson & Associates, Inc. (KSLW), headed by master architect Edward Killingsworth, with landscape design by Edward R. Lovell. The building was designed in 1987 and completed in 1989. The character-defining features of this building are its textured cement plaster wall cladding, contrasting smooth painted fenestration trim, and its hipped, low-pitched, metal-clad roof. While many of these recall a few elements of Contemporary Style such as the asymmetrical main façade and low-pitched roof, the building is not considered exemplary of the style.

The HRL building notably lacks the architectural vocabulary present in the rest of the campus: Mid-Century Modern-influenced designs; flat roofs; peach-colored brick, white or tan painted concrete, and mosaic aggregate panel accents; metal sunscreens over windows; and fully incorporated landscape design elements including plantings, colored concrete and brick walkways, covered walkways and concrete canopies; and white brick retaining walls. Because it does not match the overall campus palette, and by itself is an unremarkable example, the building cannot be said to embody the distinctive characteristics of an architectural style.

The building is designed by KSLW, which is headed by master architect Edward A. Killingsworth. However, being designed by Killingsworth or his firm does not by itself merit eligibility under this criterion. According to National Register Bulletin 15:

> The property must express a particular phase in the development of the master's career, an aspect of his or her work, or a particular idea or theme in his or her craft. A property is not eligible as the work of a master, however, simply because it was designed by a prominent architect. For example, not every building designed by Frank Lloyd Wright is eligible under this portion of Criterion C, although it might meet other portions of the Criterion, for instance as a representative of the Prairie style (NPS 1990: 20).

Interpreted for the HRL building, this means that even though the building is designed by a master architect, it was not designed in Killingsworth's specified architectural vocabulary for the campus, is not an exceptional or original design by Killingsworth, and is not representative of a period of development or design in Killingsworth's career. Therefore, the HRL building cannot be said to represent the work of Edward A. Killingsworth.

This evaluation demonstrates that despite being a Killingsworth-designed building, the HRL building is not considered a significant or particularly good example of his body of work. As such, the HRL building does not appear eligible under NRHP/CRHR Criterion C/3/C.

Criterion D/4/D: That have yielded, or may be likely to yield, information important in prehistory or history.

There is no evidence to suggest that this property has the potential to yield information important to state or local history. Therefore, the subject property does not appear eligible under NRHP/CRHR Criterion D/4/D.

California Historical Landmark Statement of Significance

In consideration of the fact that the subject property is not yet 50 years of age and does meet NRHP, CRHR, or City designation criteria, the HRL building would not qualify for CHL designation.

Integrity Discussion

Integrity is the ability of a property to convey its significance. To be listed in the NRHP or CRHR, a property must not only be shown to be significant under the NRHP designation criteria, but it also must have integrity. The seven aspects of integrity are location, setting, design, materials, workmanship, feeling, and association. In order to retain historic integrity "a property will always possess several, and usually most, of the aspects" (NPS 1990).

- The HRL building retains retain integrity of location. The location of the building has never shifted nor has it they been relocated since its construction.
- The HRL building does not retain integrity of design, as there was a comparably large addition to the north elevation added in 1989, changing the original plan and massing of the building. This addition is visible from the Earl Warren Drive right-of-way and from the main (west) elevation.
- The HRL building does not retain integrity of setting. The building was the last to be constructed among the northwest campus buildings, which include the Parkside

College campus residence halls, the Isabel Patterson Child Development Center and the Recycling Center; however, the original landscaping around the building has been altered by the addition of volleyball courts.

- The HRL building retains integrity of materials. The original wall cladding and roofing materials on the original 1987 KSLW drawing set appear unaltered, and the north addition appears to have used identical materials to the original building. No alterations to building materials was apparent from university physical planning files nor observed during survey.
- Similar to materials the HRL building retains integrity of workmanship, the physical evidence of the craftsmanship required to create the building is still in place.
- The HRL building retains integrity of feeling. The building still possess the ability to convey the feeling of a late 1980s small office building, however, the building's design and materials appear to not share the overall campus architectural vocabulary, nor is the building a focal piece that does to have to follow these architectural guidelines.
- Finally, the building is not known to be linked within any significant historical events or individuals. Therefore, it does not retain integrity of association.

The HRL building was evaluated for NRHP, CRHR, and City of Long Beach designation criteria and integrity requirements. As a result of the evaluation, the property was found not eligible under all designation criteria due to a lack of significant associations and compromised integrity. Therefore, the HRL building, is not considered an historical resource under CEQA, nor does it qualify for listing in the Master List of State-owned resources.

As a result of the significance evaluation, the proposed project would have a less than significant impact on historical resources under CEQA.

B12. References (Continued):

IPT. 1987. "A New Look Takes Form at CSULB." Independent Press-Telegram (Long Beach). August 17, 1987. Pgs C1-C2. On file in Stephen Horn Papers, CSULB Special Collections

KSLW. 1987. "CSULB Housing Office." Sheets A1-A12. Long Beach, CA: Killingsworth, Stricker, Lindgren, Wilson & Associates, Architects. Sheet set held at the CSU Long Beach Facilities Department.

NPS (National Park Service). 1990. How to Apply the National Register Criteria for Evaluation. National Register Bulletin 15. Washington, D.C.: U.S. Department of the Interior.

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Appendix D

Greenhouse Gas and Energy Outputs

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CSULB Housing Expansion Phase 1 - South Coast AQMD Air District, Annual

CSULB Housing Expansion Phase 1

South Coast AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	242.00	Dwelling Unit	1.50	136,317.00	476

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	31
Climate Zone	9			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	592.74	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Compliance with SCE 2020 33% RPS

Land Use - Project Specific information provided by CSULB

Construction Phase - Construction Schedule based on information provided by the CSULB.

Off-road Equipment - Trenching Equipment information based on standard open trench activities.

Trips and VMT - Rounded one way trip values to the nearest even integer

Demolition - Demolition of 3,800 SF office building.

Grading - CALEEMod Default values.

Vehicle Trips - Trip Generation values based on Daily Trip Rates in the FEIR for CSULB Student housing. After accounting for the commuter reduction and the no vehicles for freshman policy the project net number of trips would be a net negative. For the purposes of modeling GHG emissions it was assumed the project would not generate new trips.

Woodstoves - No proposed fireplaces.

Energy Use - Project anticipated energy use per year is 1,100,000 Kilowatt hours per year.

Water And Wastewater - Anticipated indoor water use is expected to be 11,000 gallons per day.

Land Use Change - No mitigation.

Sequestration - No mitigation.

Water Mitigation - No mitigation.

Waste Mitigation -No mitigation.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	50.00
tblConstructionPhase	NumDays	200.00	250.00
tblConstructionPhase	NumDays	20.00	31.00
tblConstructionPhase	NumDays	4.00	40.00
tblConstructionPhase	NumDays	10.00	30.00
tblConstructionPhase	NumDays	2.00	40.00
tblEnergyUse	LightingElect	741.44	800.00
tblEnergyUse	NT24E	3,054.10	3,450.00
tblEnergyUse	T24E	252.63	320.00
tblFireplaces	NumberGas	205.70	0.00
tblFireplaces	NumberNoFireplace	24.20	0.00
tblFireplaces	NumberWood	12.10	0.00
tblLandUse	LandUseSquareFeet	242,000.00	136,317.00
tblLandUse	LotAcreage	6.37	1.50
tblLandUse	Population	692.00	476.00
tblProjectCharacteristics	CO2IntensityFactor	702.44	592.74
tblTripsAndVMT	HaulingTripNumber	17.00	18.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	13.00	14.00
tblTripsAndVMT	WorkerTripNumber	35.00	36.00
tblVehicleTrips	ST_TR	6.39	0.00

tblVehicleTrips	SU_TR	5.86	0.00
tblVehicleTrips	WD_TR	6.65	0.00
tblWater	IndoorWaterUseRate	15,767,274.20	4,015,000.00
tblWoodstoves	NumberCatalytic	12.10	0.00
tblWoodstoves	NumberNoncatalytic	12.10	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1183	1.2267	0.6879	1.2700e-003	0.2238	0.0632	0.2870	0.1119	0.0585	0.1704	0.0000	114.2101	114.2101	0.0319	0.0000	115.0083
2020	0.3665	2.3418	2.6160	5.9800e-003	0.2533	0.1092	0.3625	0.0677	0.1050	0.1727	0.0000	523.5134	523.5134	0.0570	0.0000	524.9376
2021	0.4573	0.2161	0.2855	5.6000e-004	0.0194	0.0111	0.0306	5.1700e-003	0.0106	0.0157	0.0000	49.0343	49.0343	7.7500e-003	0.0000	49.2280
Maximum	**0.4573**	**2.3418**	**2.6160**	**5.9800e-003**	**0.2533**	**0.1092**	**0.3625**	**0.1119**	**0.1050**	**0.1727**	**0.0000**	**523.5134**	**523.5134**	**0.0570**	**0.0000**	**524.9376**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2019	0.1183	1.2267	0.6879	1.2700e-003	0.2238	0.0632	0.2870	0.1119	0.0585	0.1704	0.0000	114.2100	114.2100	0.0319	0.0000	115.0082
2020	0.3665	2.3418	2.6160	5.9800e-003	0.2533	0.1092	0.3625	0.0677	0.1050	0.1727	0.0000	523.5131	523.5131	0.0570	0.0000	524.9374

2021	0.4573	0.2161	0.2855	5.6000e-004	0.0194	0.0111	0.0306	5.1700e-003	0.0106	0.0157	0.0000	49.0343	49.0343	7.7500e-003	0.0000	49.2280
Maximum	**0.4573**	**2.3418**	**2.6160**	**5.9800e-003**	**0.2533**	**0.1092**	**0.3625**	**0.1119**	**0.1050**	**0.1727**	**0.0000**	**523.5131**	**523.5131**	**0.0570**	**0.0000**	**524.9374**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**7-1-2019**	**9-30-2019**	0.7600	0.7600
2	**10-1-2019**	**12-31-2019**	0.5789	0.5789
3	**1-1-2020**	**3-31-2020**	0.6343	0.6343
4	**4-1-2020**	**6-30-2020**	0.6808	0.6808
5	**7-1-2020**	**9-30-2020**	0.6883	0.6883
6	**10-1-2020**	**12-31-2020**	0.6924	0.6924
7	**1-1-2021**	**3-31-2021**	0.4574	0.4574
8	**4-1-2021**	**6-30-2021**	0.2246	0.2246
		Highest	0.7600	0.7600

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6110	0.0289	2.5011	1.3000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	4.0766	4.0766	3.9500e-003	0.0000	4.1754
Energy	0.0175	0.1494	0.0636	9.5000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	470.3443	470.3443	0.0179	6.1800e-003	472.6330
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	22.5970	0.0000	22.5970	1.3354	0.0000	55.9830

Water						0.0000	0.0000		0.0000	0.0000	1.2738	43.7480	45.0218	0.1330	3.5300e-003	49.3986
Total	**0.6285**	**0.1783**	**2.5647**	**1.0800e-003**	**0.0000**	**0.0259**	**0.0259**	**0.0000**	**0.0259**	**0.0259**	**23.8707**	**518.1690**	**542.0397**	**1.4902**	**9.7100e-003**	**582.1900**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.6110	0.0289	2.5011	1.3000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	4.0766	4.0766	3.9500e-003	0.0000	4.1754
Energy	0.0175	0.1494	0.0636	9.5000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	470.3443	470.3443	0.0179	6.1800e-003	472.6330
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	22.5970	0.0000	22.5970	1.3354	0.0000	55.9830
Water						0.0000	0.0000		0.0000	0.0000	1.2738	19.3260	20.5997	0.1318	3.2800e-003	24.8730
Total	**0.6285**	**0.1783**	**2.5647**	**1.0800e-003**	**0.0000**	**0.0259**	**0.0259**	**0.0000**	**0.0259**	**0.0259**	**23.8707**	**493.7469**	**517.6176**	**1.4890**	**9.4600e-003**	**557.6643**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**4.71**	**4.51**	**0.08**	**2.57**	**4.21**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	7/1/2019	8/12/2019	5	31	
2	Site Preparation	Site Preparation	8/13/2019	10/7/2019	5	40	
3	Grading	Grading	10/8/2019	12/2/2019	5	40	

4	Trenching	Trenching	12/3/2019	1/27/2020	5	40	
5	Building Construction	Building Construction	1/28/2020	1/11/2021	5	250	
6	Paving	Paving	1/12/2021	2/22/2021	5	30	
7	Architectural Coating	Architectural Coating	2/23/2021	5/3/2021	5	50	

Acres of Grading (Site Preparation Phase): 20

Acres of Grading (Grading Phase): 15

Acres of Paving: 0

Residential Indoor: 276,042; Residential Outdoor: 92,014; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area:

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	6.00	187	0.41
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Trenching	Excavators	1	8.00	158	0.38
Trenching	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Trenching	Trenchers	2	8.00	78	0.50
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56

Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	14.00	0.00	18.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	5	14.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	174.00	26.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	14.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	36.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8700e-003	0.0000	1.8700e-003	2.8000e-004	0.0000	2.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0356	0.3515	0.2309	3.7000e-004		0.0199	0.0199		0.0186	0.0186	0.0000	33.1949	33.1949	8.4500e-003	0.0000	33.4063
Total	**0.0356**	**0.3515**	**0.2309**	**3.7000e-004**	**1.8700e-003**	**0.0199**	**0.0218**	**2.8000e-004**	**0.0186**	**0.0189**	**0.0000**	**33.1949**	**33.1949**	**8.4500e-003**	**0.0000**	**33.4063**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.7000e-003	5.2000e-004	1.0000e-005	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.6861	0.6861	5.0000e-005	0.0000	0.6873
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	8.3000e-004	9.0500e-003	2.0000e-005	2.3800e-003	2.0000e-005	2.4000e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.2119	2.2119	7.0000e-005	0.0000	2.2136
Total	**1.1200e-003**	**3.5300e-003**	**9.5700e-003**	**3.0000e-005**	**2.5300e-003**	**3.0000e-005**	**2.5600e-003**	**6.7000e-004**	**3.0000e-005**	**7.0000e-004**	**0.0000**	**2.8980**	**2.8980**	**1.2000e-004**	**0.0000**	**2.9009**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.8700e-003	0.0000	1.8700e-003	2.8000e-004	0.0000	2.8000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0356	0.3515	0.2309	3.7000e-004		0.0199	0.0199		0.0186	0.0186	0.0000	33.1949	33.1949	8.4500e-003	0.0000	33.4062
Total	**0.0356**	**0.3515**	**0.2309**	**3.7000e-004**	**1.8700e-003**	**0.0199**	**0.0218**	**2.8000e-004**	**0.0186**	**0.0189**	**0.0000**	**33.1949**	**33.1949**	**8.4500e-003**	**0.0000**	**33.4062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.7000e-003	5.2000e-004	1.0000e-005	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.6861	0.6861	5.0000e-005	0.0000	0.6873
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0500e-003	8.3000e-004	9.0500e-003	2.0000e-005	2.3800e-003	2.0000e-005	2.4000e-003	6.3000e-004	2.0000e-005	6.5000e-004	0.0000	2.2119	2.2119	7.0000e-005	0.0000	2.2136
Total	**1.1200e-003**	**3.5300e-003**	**9.5700e-003**	**3.0000e-005**	**2.5300e-003**	**3.0000e-005**	**2.5600e-003**	**6.7000e-004**	**3.0000e-005**	**7.0000e-004**	**0.0000**	**2.8980**	**2.8980**	**1.2000e-004**	**0.0000**	**2.9009**

3.3 Site Preparation - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1160	0.0000	0.1160	0.0591	0.0000	0.0591	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0343	0.3896	0.1578	3.4000e-004		0.0177	0.0177		0.0162	0.0162	0.0000	30.9335	30.9335	9.7900e-003	0.0000	31.1782
Total	**0.0343**	**0.3896**	**0.1578**	**3.4000e-004**	**0.1160**	**0.0177**	**0.1336**	**0.0591**	**0.0162**	**0.0753**	**0.0000**	**30.9335**	**30.9335**	**9.7900e-003**	**0.0000**	**31.1782**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	6.1000e-004	6.6700e-003	2.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6309	1.6309	5.0000e-005	0.0000	1.6321
Total	**7.7000e-004**	**6.1000e-004**	**6.6700e-003**	**2.0000e-005**	**1.7600e-003**	**1.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.6309**	**1.6309**	**5.0000e-005**	**0.0000**	**1.6321**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1160	0.0000	0.1160	0.0591	0.0000	0.0591	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0343	0.3896	0.1578	3.4000e-004		0.0177	0.0177		0.0162	0.0162	0.0000	30.9335	30.9335	9.7900e-003	0.0000	31.1782
Total	**0.0343**	**0.3896**	**0.1578**	**3.4000e-004**	**0.1160**	**0.0177**	**0.1336**	**0.0591**	**0.0162**	**0.0753**	**0.0000**	**30.9335**	**30.9335**	**9.7900e-003**	**0.0000**	**31.1782**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	6.1000e-004	6.6700e-003	2.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6309	1.6309	5.0000e-005	0.0000	1.6321
Total	**7.7000e-004**	**6.1000e-004**	**6.6700e-003**	**2.0000e-005**	**1.7600e-003**	**1.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.6309**	**1.6309**	**5.0000e-005**	**0.0000**	**1.6321**

3.4 Grading - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0284	0.3207	0.1321	2.8000e-004		0.0147	0.0147		0.0136	0.0136	0.0000	25.3357	25.3357	8.0200e-003	0.0000	25.5361
Total	**0.0284**	**0.3207**	**0.1321**	**2.8000e-004**	**0.0983**	**0.0147**	**0.1130**	**0.0505**	**0.0136**	**0.0641**	**0.0000**	**25.3357**	**25.3357**	**8.0200e-003**	**0.0000**	**25.5361**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	6.1000e-004	6.6700e-003	2.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6309	1.6309	5.0000e-005	0.0000	1.6321
Total	**7.7000e-004**	**6.1000e-004**	**6.6700e-003**	**2.0000e-005**	**1.7600e-003**	**1.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.6309**	**1.6309**	**5.0000e-005**	**0.0000**	**1.6321**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Fugitive Dust					0.0983	0.0000	0.0983	0.0505	0.0000	0.0505	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0284	0.3207	0.1321	2.8000e-004		0.0147	0.0147		0.0136	0.0136	0.0000	25.3357	25.3357	8.0200e-003	0.0000	25.5361
Total	**0.0284**	**0.3207**	**0.1321**	**2.8000e-004**	**0.0983**	**0.0147**	**0.1130**	**0.0505**	**0.0136**	**0.0641**	**0.0000**	**25.3357**	**25.3357**	**8.0200e-003**	**0.0000**	**25.5361**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.7000e-004	6.1000e-004	6.6700e-003	2.0000e-005	1.7600e-003	1.0000e-005	1.7700e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.6309	1.6309	5.0000e-005	0.0000	1.6321
Total	**7.7000e-004**	**6.1000e-004**	**6.6700e-003**	**2.0000e-005**	**1.7600e-003**	**1.0000e-005**	**1.7700e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.6309**	**1.6309**	**5.0000e-005**	**0.0000**	**1.6321**

3.5 Trenching - 2019

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0168	0.1595	0.1380	1.9000e-004		0.0109	0.0109		9.9900e-003	9.9900e-003	0.0000	17.0878	17.0878	5.4100e-003	0.0000	17.2230
Total	**0.0168**	**0.1595**	**0.1380**	**1.9000e-004**		**0.0109**	**0.0109**		**9.9900e-003**	**9.9900e-003**	**0.0000**	**17.0878**	**17.0878**	**5.4100e-003**	**0.0000**	**17.2230**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	5.6000e-004	6.1300e-003	2.0000e-005	1.6100e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4984	1.4984	5.0000e-005	0.0000	1.4995
Total	**7.1000e-004**	**5.6000e-004**	**6.1300e-003**	**2.0000e-005**	**1.6100e-003**	**1.0000e-005**	**1.6300e-003**	**4.3000e-004**	**1.0000e-005**	**4.4000e-004**	**0.0000**	**1.4984**	**1.4984**	**5.0000e-005**	**0.0000**	**1.4995**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0168	0.1595	0.1380	1.9000e-004		0.0109	0.0109		9.9900e-003	9.9900e-003	0.0000	17.0878	17.0878	5.4100e-003	0.0000	17.2230
Total	**0.0168**	**0.1595**	**0.1380**	**1.9000e-004**		**0.0109**	**0.0109**		**9.9900e-003**	**9.9900e-003**	**0.0000**	**17.0878**	**17.0878**	**5.4100e-003**	**0.0000**	**17.2230**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.1000e-004	5.6000e-004	6.1300e-003	2.0000e-005	1.6100e-003	1.0000e-005	1.6300e-003	4.3000e-004	1.0000e-005	4.4000e-004	0.0000	1.4984	1.4984	5.0000e-005	0.0000	1.4995
Total	**7.1000e-004**	**5.6000e-004**	**6.1300e-003**	**2.0000e-005**	**1.6100e-003**	**1.0000e-005**	**1.6300e-003**	**4.3000e-004**	**1.0000e-005**	**4.4000e-004**	**0.0000**	**1.4984**	**1.4984**	**5.0000e-005**	**0.0000**	**1.4995**

3.5 Trenching - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0143	0.1351	0.1245	1.7000e-004		9.0400e-003	9.0400e-003		8.3200e-003	8.3200e-003	0.0000	15.1275	15.1275	4.8900e-003	0.0000	15.2498
Total	**0.0143**	**0.1351**	**0.1245**	**1.7000e-004**		**9.0400e-003**	**9.0400e-003**		**8.3200e-003**	**8.3200e-003**	**0.0000**	**15.1275**	**15.1275**	**4.8900e-003**	**0.0000**	**15.2498**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	4.6000e-004	5.0400e-003	1.0000e-005	1.4600e-003	1.0000e-005	1.4700e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3136	1.3136	4.0000e-005	0.0000	1.3145
Total	**5.9000e-004**	**4.6000e-004**	**5.0400e-003**	**1.0000e-005**	**1.4600e-003**	**1.0000e-005**	**1.4700e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.3136**	**1.3136**	**4.0000e-005**	**0.0000**	**1.3145**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0143	0.1351	0.1245	1.7000e-004		9.0400e-003	9.0400e-003		8.3200e-003	8.3200e-003	0.0000	15.1274	15.1274	4.8900e-003	0.0000	15.2497
Total	**0.0143**	**0.1351**	**0.1245**	**1.7000e-004**		**9.0400e-003**	**9.0400e-003**		**8.3200e-003**	**8.3200e-003**	**0.0000**	**15.1274**	**15.1274**	**4.8900e-003**	**0.0000**	**15.2497**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.9000e-004	4.6000e-004	5.0400e-003	1.0000e-005	1.4600e-003	1.0000e-005	1.4700e-003	3.9000e-004	1.0000e-005	4.0000e-004	0.0000	1.3136	1.3136	4.0000e-005	0.0000	1.3145
Total	**5.9000e-004**	**4.6000e-004**	**5.0400e-003**	**1.0000e-005**	**1.4600e-003**	**1.0000e-005**	**1.4700e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.3136**	**1.3136**	**4.0000e-005**	**0.0000**	**1.3145**

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2467	1.7968	1.6024	2.6800e-003		0.0967	0.0967		0.0934	0.0934	0.0000	220.5737	220.5737	0.0410	0.0000	221.5974
Total	**0.2467**	**1.7968**	**1.6024**	**2.6800e-003**		**0.0967**	**0.0967**		**0.0934**	**0.0934**	**0.0000**	**220.5737**	**220.5737**	**0.0410**	**0.0000**	**221.5974**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0106	0.3371	0.0835	8.0000e-004	0.0199	1.6500e-003	0.0216	5.7500e-003	1.5800e-003	7.3300e-003	0.0000	77.6962	77.6962	5.1000e-003	0.0000	77.8237
Worker	0.0944	0.0724	0.8007	2.3100e-003	0.2319	1.7900e-003	0.2337	0.0616	1.6500e-003	0.0633	0.0000	208.8025	208.8025	5.9900e-003	0.0000	208.9523
Total	**0.1050**	**0.4095**	**0.8842**	**3.1100e-003**	**0.2519**	**3.4400e-003**	**0.2553**	**0.0674**	**3.2300e-003**	**0.0706**	**0.0000**	**286.4987**	**286.4987**	**0.0111**	**0.0000**	**286.7760**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2467	1.7968	1.6024	2.6800e-003		0.0967	0.0967		0.0934	0.0934	0.0000	220.5734	220.5734	0.0410	0.0000	221.5971
Total	**0.2467**	**1.7968**	**1.6024**	**2.6800e-003**		**0.0967**	**0.0967**		**0.0934**	**0.0934**	**0.0000**	**220.5734**	**220.5734**	**0.0410**	**0.0000**	**221.5971**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0106	0.3371	0.0835	8.0000e-004	0.0199	1.6500e-003	0.0216	5.7500e-003	1.5800e-003	7.3300e-003	0.0000	77.6962	77.6962	5.1000e-003	0.0000	77.8237
Worker	0.0944	0.0724	0.8007	2.3100e-003	0.2319	1.7900e-003	0.2337	0.0616	1.6500e-003	0.0633	0.0000	208.8025	208.8025	5.9900e-003	0.0000	208.9523
Total	**0.1050**	**0.4095**	**0.8842**	**3.1100e-003**	**0.2519**	**3.4400e-003**	**0.2553**	**0.0674**	**3.2300e-003**	**0.0706**	**0.0000**	**286.4987**	**286.4987**	**0.0111**	**0.0000**	**286.7760**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.3400e-003	0.0477	0.0452	8.0000e-005		2.4000e-003	2.4000e-003		2.3100e-003	2.3100e-003	0.0000	6.3542	6.3542	1.1300e-003	0.0000	6.3825

Total	**6.3400e-003**	**0.0477**	**0.0452**	**8.0000e-005**		**2.4000e-003**	**2.4000e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**6.3542**	**6.3542**	**1.1300e-003**	**0.0000**	**6.3825**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6000e-004	8.8100e-003	2.1800e-003	2.0000e-005	5.7000e-004	2.0000e-005	5.9000e-004	1.7000e-004	2.0000e-005	1.8000e-004	0.0000	2.2217	2.2217	1.4000e-004	0.0000	2.2253
Worker	2.5400e-003	1.8800e-003	0.0212	6.0000e-005	6.6800e-003	5.0000e-005	6.7300e-003	1.7700e-003	5.0000e-005	1.8200e-003	0.0000	5.8200	5.8200	1.6000e-004	0.0000	5.8239
Total	**2.8000e-003**	**0.0107**	**0.0234**	**8.0000e-005**	**7.2500e-003**	**7.0000e-005**	**7.3200e-003**	**1.9400e-003**	**7.0000e-005**	**2.0000e-003**	**0.0000**	**8.0417**	**8.0417**	**3.0000e-004**	**0.0000**	**8.0491**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.3400e-003	0.0477	0.0452	8.0000e-005		2.4000e-003	2.4000e-003		2.3100e-003	2.3100e-003	0.0000	6.3542	6.3542	1.1300e-003	0.0000	6.3825
Total	**6.3400e-003**	**0.0477**	**0.0452**	**8.0000e-005**		**2.4000e-003**	**2.4000e-003**		**2.3100e-003**	**2.3100e-003**	**0.0000**	**6.3542**	**6.3542**	**1.1300e-003**	**0.0000**	**6.3825**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.6000e-004	8.8100e-003	2.1800e-003	2.0000e-005	5.7000e-004	2.0000e-005	5.9000e-004	1.7000e-004	2.0000e-005	1.8000e-004	0.0000	2.2217	2.2217	1.4000e-004	0.0000	2.2253
Worker	2.5400e-003	1.8800e-003	0.0212	6.0000e-005	6.6800e-003	5.0000e-005	6.7300e-003	1.7700e-003	5.0000e-005	1.8200e-003	0.0000	5.8200	5.8200	1.6000e-004	0.0000	5.8239
Total	**2.8000e-003**	**0.0107**	**0.0234**	**8.0000e-005**	**7.2500e-003**	**7.0000e-005**	**7.3200e-003**	**1.9400e-003**	**7.0000e-005**	**2.0000e-003**	**0.0000**	**8.0417**	**8.0417**	**3.0000e-004**	**0.0000**	**8.0491**

3.7 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0116	0.1161	0.1329	2.0000e-004		6.2300e-003	6.2300e-003		5.7400e-003	5.7400e-003	0.0000	17.6475	17.6475	5.5900e-003	0.0000	17.7873
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0116**	**0.1161**	**0.1329**	**2.0000e-004**		**6.2300e-003**	**6.2300e-003**		**5.7400e-003**	**5.7400e-003**	**0.0000**	**17.6475**	**17.6475**	**5.5900e-003**	**0.0000**	**17.7873**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	6.5000e-004	7.3200e-003	2.0000e-005	2.3000e-003	2.0000e-005	2.3200e-003	6.1000e-004	2.0000e-005	6.3000e-004	0.0000	2.0069	2.0069	5.0000e-005	0.0000	2.0082
Total	**8.8000e-004**	**6.5000e-004**	**7.3200e-003**	**2.0000e-005**	**2.3000e-003**	**2.0000e-005**	**2.3200e-003**	**6.1000e-004**	**2.0000e-005**	**6.3000e-004**	**0.0000**	**2.0069**	**2.0069**	**5.0000e-005**	**0.0000**	**2.0082**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0116	0.1161	0.1329	2.0000e-004		6.2300e-003	6.2300e-003		5.7400e-003	5.7400e-003	0.0000	17.6474	17.6474	5.5900e-003	0.0000	17.7873
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0116**	**0.1161**	**0.1329**	**2.0000e-004**		**6.2300e-003**	**6.2300e-003**		**5.7400e-003**	**5.7400e-003**	**0.0000**	**17.6474**	**17.6474**	**5.5900e-003**	**0.0000**	**17.7873**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.8000e-004	6.5000e-004	7.3200e-003	2.0000e-005	2.3000e-003	2.0000e-005	2.3200e-003	6.1000e-004	2.0000e-005	6.3000e-004	0.0000	2.0069	2.0069	5.0000e-005	0.0000	2.0082
Total	**8.8000e-004**	**6.5000e-004**	**7.3200e-003**	**2.0000e-005**	**2.3000e-003**	**2.0000e-005**	**2.3200e-003**	**6.1000e-004**	**2.0000e-005**	**6.3000e-004**	**0.0000**	**2.0069**	**2.0069**	**5.0000e-005**	**0.0000**	**2.0082**

3.8 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4265					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4700e-003	0.0382	0.0454	7.0000e-005		2.3500e-003	2.3500e-003		2.3500e-003	2.3500e-003	0.0000	6.3831	6.3831	4.4000e-004	0.0000	6.3941
Total	**0.4320**	**0.0382**	**0.0454**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.3500e-003**	**2.3500e-003**	**0.0000**	**6.3831**	**6.3831**	**4.4000e-004**	**0.0000**	**6.3941**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7500e-003	2.7700e-003	0.0314	1.0000e-004	9.8700e-003	7.0000e-005	9.9500e-003	2.6200e-003	7.0000e-005	2.6900e-003	0.0000	8.6009	8.6009	2.3000e-004	0.0000	8.6067
Total	**3.7500e-003**	**2.7700e-003**	**0.0314**	**1.0000e-004**	**9.8700e-003**	**7.0000e-005**	**9.9500e-003**	**2.6200e-003**	**7.0000e-005**	**2.6900e-003**	**0.0000**	**8.6009**	**8.6009**	**2.3000e-004**	**0.0000**	**8.6067**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4265					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.4700e-003	0.0382	0.0454	7.0000e-005		2.3500e-003	2.3500e-003		2.3500e-003	2.3500e-003	0.0000	6.3831	6.3831	4.4000e-004	0.0000	6.3941
Total	**0.4320**	**0.0382**	**0.0454**	**7.0000e-005**		**2.3500e-003**	**2.3500e-003**		**2.3500e-003**	**2.3500e-003**	**0.0000**	**6.3831**	**6.3831**	**4.4000e-004**	**0.0000**	**6.3941**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7500e-003	2.7700e-003	0.0314	1.0000e-004	9.8700e-003	7.0000e-005	9.9500e-003	2.6200e-003	7.0000e-005	2.6900e-003	0.0000	8.6009	8.6009	2.3000e-004	0.0000	8.6067
Total	**3.7500e-003**	**2.7700e-003**	**0.0314**	**1.0000e-004**	**9.8700e-003**	**7.0000e-005**	**9.9500e-003**	**2.6200e-003**	**7.0000e-005**	**2.6900e-003**	**0.0000**	**8.6009**	**8.6009**	**2.3000e-004**	**0.0000**	**8.6067**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	14.70	5.90	8.70	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.548858	0.043235	0.200706	0.120309	0.016131	0.005851	0.021034	0.033479	0.002070	0.001877	0.004817	0.000707	0.000925

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	297.3456	297.3456	0.0146	3.0100e-003	298.6063
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	297.3456	297.3456	0.0146	3.0100e-003	298.6063
NaturalGas Mitigated	0.0175	0.1494	0.0636	9.5000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	172.9987	172.9987	3.3200e-003	3.1700e-003	174.0267
NaturalGas Unmitigated	0.0175	0.1494	0.0636	9.5000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	172.9987	172.9987	3.3200e-003	3.1700e-003	174.0267

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	3.24187e+006	0.0175	0.1494	0.0636	9.5000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	172.9987	172.9987	3.3200e-003	3.1700e-003	174.0267
Total		**0.0175**	**0.1494**	**0.0636**	**9.5000e-004**		**0.0121**	**0.0121**		**0.0121**	**0.0121**	**0.0000**	**172.9987**	**172.9987**	**3.3200e-003**	**3.1700e-003**	**174.0267**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	3.24187e+006	0.0175	0.1494	0.0636	9.5000e-004		0.0121	0.0121		0.0121	0.0121	0.0000	172.9987	172.9987	3.3200e-003	3.1700e-003	174.0267
Total		**0.0175**	**0.1494**	**0.0636**	**9.5000e-004**		**0.0121**	**0.0121**		**0.0121**	**0.0121**	**0.0000**	**172.9987**	**172.9987**	**3.3200e-003**	**3.1700e-003**	**174.0267**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.10594e+006	297.3456	0.0146	3.0100e-003	298.6063
Total		**297.3456**	**0.0146**	**3.0100e-003**	**298.6063**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Apartments Mid Rise	1.10594e+006	297.3456	0.0146	3.0100e-003	298.6063
Total		**297.3456**	**0.0146**	**3.0100e-003**	**298.6063**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.6110	0.0289	2.5011	1.3000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	4.0766	4.0766	3.9500e-003	0.0000	4.1754
Unmitigated	0.6110	0.0289	2.5011	1.3000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	4.0766	4.0766	3.9500e-003	0.0000	4.1754

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0427					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4926					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0758	0.0289	2.5011	1.3000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	4.0766	4.0766	3.9500e-003	0.0000	4.1754
Total	**0.6110**	**0.0289**	**2.5011**	**1.3000e-004**		**0.0138**	**0.0138**		**0.0138**	**0.0138**	**0.0000**	**4.0766**	**4.0766**	**3.9500e-003**	**0.0000**	**4.1754**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0427					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.4926					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0758	0.0289	2.5011	1.3000e-004		0.0138	0.0138		0.0138	0.0138	0.0000	4.0766	4.0766	3.9500e-003	0.0000	4.1754
Total	**0.6110**	**0.0289**	**2.5011**	**1.3000e-004**		**0.0138**	**0.0138**		**0.0138**	**0.0138**	**0.0000**	**4.0766**	**4.0766**	**3.9500e-003**	**0.0000**	**4.1754**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Reclaimed Water

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	20.5997	0.1318	3.2800e-003	24.8730
Unmitigated	45.0218	0.1330	3.5300e-003	49.3986

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.015 / 9.94024	45.0218	0.1330	3.5300e-003	49.3986
Total		**45.0218**	**0.1330**	**3.5300e-003**	**49.3986**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Apartments Mid Rise	4.015 / 1.76428	20.5997	0.1318	3.2800e-003	24.8730
Total		**20.5997**	**0.1318**	**3.2800e-003**	**24.8730**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	22.5970	1.3354	0.0000	55.9830
Unmitigated	22.5970	1.3354	0.0000	55.9830

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	111.32	22.5970	1.3354	0.0000	55.9830
Total		**22.5970**	**1.3354**	**0.0000**	**55.9830**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Apartments Mid Rise	111.32	22.5970	1.3354	0.0000	55.9830
Total		**22.5970**	**1.3354**	**0.0000**	**55.9830**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation